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THE

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VOL. III. APRIL, 1826. No. I.

ART. I.—*Charakteristik der Franzoesichen Medicin.* Von JOH. LUD. CASPER. Leipzig, 1822.

IN a former number of this Journal we gave an account of a part of this interesting volume; and we now proceed to the analysis of what we were then, from want of room, obliged to defer. The principal subject of the portion of this volume which remains to be noticed, is embraced in the eighth chapter, and consists of a circumstantial and well digested account of the public and private institutions for the reception of the insane, together with the prevailing opinions in France relative to the cause, nature, and treatment of mania.

The French have had peculiar facilities for investigating the pathology and treatment of mental diseases; and they have, perhaps, made greater progress in this department of the healing art than any other nation. Agitated and convulsed for nearly a half a century with the mightiest political storms —distracted and confounded in the vortex of anarchy and faction, and oppressed with all the apalling evils of a military despotism, France was long placed amid circumstances peculiarly calculated to excite the most turbulent passions on the one hand, and to prostrate the hopes and happiness of her

subjects on the other, and thus to bring into play the most powerful exciting causes of mental disease. Hence in France, especially in Paris,*—the focus of its political intrigues, cabals, and enormities,—insanity in all its various forms has been more common than in any other country. It is to this circumstance, in part, that we must ascribe the great comparative success with which the pathology and treatment of mental diseases have been investigated in France. The large and numerous hospitals in Paris dedicated to the reception of those unfortunate beings who suffer under this severe infliction of Providence, afford the most extensive opportunities for observation; and the peculiar attachment of the French to autopsic examinations, has enabled them, under these advantages of opportunity, to shed very considerable light on the nature and treatment of these diseases.

The author commences his subject with a short view of the leading theoretical notions of the French physicians concerning insanity. He observes, that many of the French writers on this subject have adopted the erroneous doctrine, that all mental diseases are essentially dependant on some morbid corporeal affection, either functional or organic. He thinks, with many others, that the mind may become idiopathically deranged and without any previous and necessary derangement in the animal system.

Though well convinced that the phenomena of mind depend on the action of an independent principle, and that they are by no means referrible to the action of matter, we are inclined to the opinion, that in all instances of insanity, the mental aberration depends on some abnormal condition in the animal system. Some physicians have endeavoured to ascertain the seat of the primary irritation of insanity, but the observations

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* According to *Tenon** there were but 1009 insane persons in the Parisian hospitals and private institutions in 1786. Immediately *after* the revolution there were upwards of 2000.

* *Memoirs sur les hospitaux de Paris*, 1788.

we have on this subject, are as yet exceedingly unsatisfactory and vague. A late French author maintains, that the primary seat of mental derangement is always in the *epigastric region;* from which, as from a centre,—*comme par une espéce d'irradiation*—the morbid irritation is propagated to the sensorium. Although we are far from adopting this opinion—which is much too limited and exclusive to be admitted in the pathology of mental diseases, we do think that there is sufficient evidence extant to render it extremely probable, that, in some instances at least, the primary cause of insanity consists in an irritation or morbid condition located in some of the abdominal viscera. This is an old doctrine,—Aretæus† observes, "Verum præcipuæ furoris et melancholiæ sedes viscera sunt." The intimate relation subsisting between the brain and the chylopoietic viscera is indeed well known. A derangement of the functions of either of these parts of the system, seldom fails to induce a corresponding disorder in the functions of the other. Sudden fear, or disappointment, or anger, dissipates, in a moment, the keenest appetite; and a deranged state of the digestive organs, is no less apt to produce a torpor of intellect, irresolution, and mental distress. In whatever part of the system the *primary* irritation may be located, it must, however, always be communicated to the *brain*, the organ of the mind, before the intellectual faculties can be deranged; and the immediate cause of insanity may therefore be regarded as a morbid condition of this organ, existing either as a sympathetic or idiopathic affection. As the musician cannot draw melodious tones from an instrument that is defective, so the mind cannot produce harmonious and sound thought, when its organ, the brain, is in a state of morbid irritation; and it matters not whether this morbid condition be the result of causes acting immediately on the brain, or of such as primarily affect other organs whose sympathetic con-

* Nouvelles Recherches sur les maladies de l'esprit: par A. Matthey, de Genere. Paris 1816.

† De caus. et sig. morb. diut: l. i. c. 37.

nexion with the sensorium, is such as to affect its functions. But, not to take up any more room with speculations of this sort, we pass on to what may be deemed more useful and interesting on this subject.

It is a remarkable circumstance, that insanity occurs but very seldom among rude and uncivilized nations; and that the frequency of its occurrence among a people, bears a pretty close relation to the degree of refinement and civilization at which they have arrived. Among the European nations, Spain has the smallest number of maniacal subjects; and France has a larger proportion, with reference to its population, than England. We are aware that Foderé asserts, "that England possesses more than four times the number of insane persons than France;"* but from the best accounts which we have on this subject, this estimate appears to be exceedingly erroneous. According to our author's estimate, drawn from the best sources, the proportion of insane to the population in England and France is as follows:

| | *Insane.* | | *Population.* | | |
|---|---|---|---|---|---|
| In Paris there are | 2000 | to | 700,000 | that is $5\frac{5}{7}$ | : 2000 |
| Depart. des hautes Pyrenées, | 121 | to | 200,000 | that is $1\frac{1}{4}$ | : 2000 |
| Dep. des bouches-du-Rhone, | 160 | to | 400,000 | that is $\frac{4}{5}$ | : 2000 |
| England & Wales,† | 6000 | to | 12,000,000 | that is 1 | : 2000 |
| Scotland, | 5000 | to | 2,000,000 | that is 5 | : 2000 |
| Mary-le Bone, | 50 | to | 80,000 | that is $1\frac{1}{4}$ | : 2000 |
| London, | 2005 | to | 1,200,000 | that is $3\frac{1}{3}$ | : 2000 |

In speaking of those political, moral, and physical occurrences, which operated especially in increasing the instances of insanity, our author observes that the horrors and calamities which attended the French revolution, had the effect of augmenting the number of insane persons in Paris in a two-fold ratio. He states, also, that the great scarcity of bread in

* Traité' du Delire. Paris 1817, l. c. 11, p. 31.

† G. M. Burrows' Inquiry into certain errors relative to Insanity. Lond. 1820, l.c. p. 98.

Paris in the year 1816, during which time the poorer class of people were almost in a state of famine, was followed in 1817 with an uncommon increase in the number of maniacal cases. During this year more than double the usual number of insane persons were received in the hospital *Salpetrière.* The same increase of insanity occurred in Ireland in the year 1815—a year memorable for the calamitous dearth of provisions in that country.

In relation to the comparative frequency of insanity in the two sexes, it appears from the data collected by our author, that in France mental derangement is more common with the female than the male sex; while in England the reverse seems to be the case.

According to the inquiries of Esquirol insanity is most apt to occur between the ages of twenty-five and thirty. Pinel considers the period during which persons are most liable to mental derangement, to be from the twentieth to the fourtieth year. Our author gives the following tabular statement, drawn from the observations of Pinel, Esquirol, Haslam and others, relative to this point.

| Age. | 15 to 20 | 20 to 30 | 30 to 40 | 40 to 50 | 50 to 60 | 60 to 70 | 70 to 80 |
|---|---|---|---|---|---|---|---|
| Pinel, in the Bicetre from 1784—94 (males) admitted, | 65 | 339 | 380 | 236 | 130 | 51 | 0 |
| Esquirol in Salpetriére from 1811—14 (females) admitted, | 171 | 135 | 403 | 205 | 115 | 66 | 23 |
| Haslam, Bethlem hospital, from 1784—94 admitted, | 113 | 488 | 527 | 362 | 143 | 131 | 0 |
| Esquirol's private institution, 1811—14 (wealthy patients,) | 0 | 150 | 78 | 30 | 46 | 15 | 8 |
| Hospital of Retreat at York, 1796—1811 (quakers,) | 8 | 44 | 28 | 28 | 27 | 9 | 4 |
| | 357 | 1156 | 1416 | 861 | 661 | 172 | 35 |

*Aetiology.* Georget divides the causes of insanity into three classes, viz: the predisposing: the direct or cerebral; and the indirect or sympathetic exciting causes. Among the first he mentions hereditary predisposition, parturition, climacteric periods of life, and old age. The second class he subdivides into physical and moral causes. The third into physiological and pathological. Among the *physiological*, indirect, or sympathetic causes, he names suppressed habitual evacuations and secretions; and among the *pathological* indirect causes, inebriety, fever, apoplexy, worms &c. Our author saw many cases of insanity which were the consequence of onanism and ungovernable venereal passion. During his attendance at Esquirols' private institution, he saw a deranged female, whose countenance always wore the most libidinous and voluptuous cast, soliciting every male who approached her to amorous intercourse. "*Savez-vous,*" *said she to our author,* "*savez-vous ma maladie? C'est l'amour. Il me faut un mari et je serais guérie. On nomme ma maladie hystérique, mais ce n'est pas cela—il faudrait me guérir!*" I was at service, said she smiling, in the military school, and O! how healthy I was then! Had you a husband then said our author? "monsieur, j'en avais quinze." I had fifteen—was her reply. He also relates the case of a well educated and genteel girl, aged nineteen, who suffered frequent and protracted hysteric convulsions. After a long and fruitless attempt to relieve her by remediate applications, she suddenly disappeared from her father's house and no one knew what had become of her. Some months after absenting herself from her home, Esquirol, who had previously attended her, at her father's house, met her in an obscure part of Paris and immediately recognized her. "What are you doing here?" said Esquirol; "*je me guéris,*" was the reply. Soon afterwards she aborded twice, became cured of her malady, and returned to her home sorrowing and resolved to lead a virtuous life.

The following table affords an interesting view of the

relative frequency of mental derangement from its various causes.

| *Physical Causes.* | Salpetrière, in the years 1811-12. | Esquirol's private hos. 1811-12. | Bicêtre, 1803-13. |
|---|---|---|---|
| Hereditary, | 105 | 150 | |
| Pregnancy, | 11 | 4 | |
| Epilepsy, | 11 | 2 | 118 |
| Suppressed Menstruation, | 55 | 19 | |
| Puerperal state, | 52 | 21 | |
| Old Age, | 60 | 4 | 36 |
| Coup du soleil, | 12 | 4 | |
| Injuries of the Head, | 14 | 4 | |
| Congenital, | | | 69 |
| Fever, | 13 | 12 | 157 |
| Apoplexy, | 60 | 10 | |
| Malformation of the Skull, | | | 9 |
| Fire & other Injurious Substances, | | | 27 |
| Syphilis, | 8 | 1 | |
| Imprudent use of Mercury, | 14 | 18 | |
| Onanism, | | | 21 |
| Intoxication, | | | 106 |
| Worms, | 24 | 4 | |
| Suppressed Cutaneous Diseases, | | | 6 |
| Suppressed Hæmorrhoids, | | | |
| *Moral Causes.* | | | |
| Grief, | 105 | 31 | 99 |
| Unfortunate Love, | 46 | 25 | 37 |
| Fanaticism, | 8 | 1 | 55 |
| Fright, | 38 | 8 | |
| Jealousy, | 18 | 14 | |
| Anger, | 16 | | |
| Distress and Want, | 77 | 14 | 116 |
| Mortified pride, | 1 | 16 | |
| Disappointed Ambition, | | 12 | 78 |
| Intense and Protracted Study, | | 13 | 49 |
| Misanthropy, | | 2 | |
| Vives Révolutions d'esprit, | | | 58 |
| Political Causes, | 14 | 31 | |

The author observes that Esquirol states in his lectures that he has seen eleven persons cured of mania after the expulsion of a large number of worms, by the use of anthelmentics. The author saw a case of mania occasioned by the healing up of a fistulous ulcer on the left arm. The patient was admitted into the hospital, in a state of complete mania. An epispastic was applied to the arm; this produced an extensive phlegmonous inflammation of the whole extremity; the fistulous ulcer returned, and the patient speedily recovered the regular exercise of his mental faculties. In another instance he witnessed the re-opening of a habitual ulcer on the leg, by the application of blisters to the part, restore the lost reason of a patient. A young man was for seven years annually affected with erysipelas on different parts of the body. During the eighth year no erysipelatous inflammation made its appearance; but instead of it he became melancholic, and attempted suicide. Four months after this he became affected with intermittent fever, during the first ten paroxysms of which he was perfectly free from his mental disease. With the eleventh paroxysm the fever ceased, but his melancholy returned and continued until the following year, when he was again attacked with his erysipelatous affection, and freed of his melancholy.

*Prognostic observations.* The author has brought together many interesting facts and observations concerning the degree of sanability of mental diseases. Esquirol, and more recently Georget, maintains that in no country are more mental diseases cured than in France. Burrows protests against this observation and calls it a groundless *gasconade.* According to the following tabular statement, however, the palm would seem to belong to the French.

| *FRANCE.* | Period. | Number treated. | Cured. | Died. | Remain. | Discharged partially relieved. | Discharged. | Decimal proportion of cured. |
|---|---|---|---|---|---|---|---|---|
| Hosp. Salpetriére, Pinel, | 1801-1805 | 1002 | 473 | 250 | 270 | | | 0,47 1-5 |
| Esquirol, | 1806 | 333 | 160 | 33 | 140 | | | ,48 |
| the same, | 1807 | 289 | 136 | 70 | 83 | | | ,47 1-18 |
| Pinel, | 1812-1814 | 891 | 413 | | | | | ,46 1-5 |
| Hospital Bicetre,— Chamseru, | 1807 | 102 | 33 | | | | | ,32 1-3 |
| Hosp. Charenton, Pinel, | 1789-1800 | 97 | 33 | | | | | ,34 |
| Foderé, | 1803 | 499 | 161 | | | | | ,32 1-4 |
| Royer,—Collard, | 1806 | 355 | 134 | 36 | 142 | | 5 | ,36 2-3 |
| Chamseru, | ½ of 1807 | 214 | 91 | | | | | ,42 1-2 |
| Esquirol's priv. Ins. | 1801-1813 | 335 | 173 | | | | | ,51 7-11 |
| Dubuisson's, | | 300 | 177 | | | | | ,59 |
| *Sum for France:* | | 4427 | 1984 | | | | | 0,44 9-11 |
| *ENGLAND.* | | | | | | | | |
| Bethlem, according to Haslam, | 1748-1794 | 8874 | 2557 | | | | | ,28 7-9 |
| Haslam, (dif. acct.) | 1784-1794 | 1664 | 574 | | | | | ,34 1-2 |
| St. Lukes, Tuke, | 1751-1819 | 12173 | 5091 | 1013 | 166 | | 5903 | ,41 5-6 |
| Hospital at York, Foderé, | 1777-1807 | 1739 | 746 | 192 | 141 | 410 | 250 | ,42 7-8 |
| Retreat at York, Tuke, | 1796-1811 | 149 | 49 | 26 | 47 | 18 | 9 | ,32 4-5 |
| Hosp. at Manchester, Foderé, | 1766-1805 | 1686 | 667 | 190 | 85 | 220 | 324 | ,39 1-2 |
| Hosp. at Montrose, Act of Parl. | 1805-1815 | 154 | 34 | 36 | 54 | 25 | 5 | ,22 1-13 |
| Hosp. at Nottingham, Burrows, | 1812-1819 | 336 | 179 | 39 | 48 | | 70 | ,53 1-4 |
| Hosp. at Exeter, Burrows, | 1801-1819 | 626 | 355 | 53 | 45 | | 173 | ,56 5-7 |
| Hosp. at Glasgow, Burrows, | 1819 | 183 | 39 | 10 | 106 | | 28 | ,21 1-3 |
| Hosp. at Manchester, Burrows, | 1820 | 350 | 74 | 31 | 190 | 2 | 71 | ,21 1-7 |
| Bethlem, Act of Parliament, | 1800 1815 | 4810 | 1839 | | | | | ,39 1-4 |
| *Sum for England:* | | 32744 | 12254 | | | | | 0,37 2-5 |

From this statement it would appear as a general result, that in France 0,44 9-11 of maniacal patients are cured. In England the proportion is not so great, being only 0,37 2-5.

The medium proportion of cures effected in the Hospital Salpetriére, is 0,47. At St. Luke's hospital in London, the proportion cured during a period of more than seventy years is only 41 5-6. At Charenton the proportion is 0,42 1-3 whilst at the Bethlem hospital it is only 39 1-4. If, in addition to these comparative results, we take into view the fact, that inveterate cases, and such as have already been discharged from other institutions as incurable, are not admitted into Bethlem and St. Luke's, the proportion of cures effected is still more strikingly in favour of the French. In looking over the foregoing table we observe also that at the Hospital Charenton, the annual number of cures effected is pretty uniform during a period of fourteen years. At Bethlem, on the contrary, we perceive that the difference in the proportion of cures effected in the forty-six years—from 1748 to 1794—and the fifteen years—from 1800 to 1815, is 11 per centum in favour of the latter period; a strong evidence that in England the treatment of mental diseases has within the last twenty-five years received great improvements.

As already intimated, no patient is received into the two English hospitals—Bethlem and St. Lukes, who have already been more than *one year* affected with insanity; and all who have been under remediate treatment in these institutions for *one year* without any amendment, *are discharged as incurable.* How very wrong and injurious these regulations are, is manifested by the following tabular statement of cures effected by Esquirol in the Salpetriére during eleven successive years.

*There were treated in the years*

| | 1804 | 1805 | 1806 | 1807 | 1808 | 1809 | 1810 | 1811 | 1812 | 1813 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total number. | 209 | 212 | 206 | 204 | 188 | 209 | 190 | 163 | 208 | 216 | *total* |
| Of which were cured during the | | | | | | | | | | | |
| 1st year, | 64 | 73 | 78 | 60 | 64 | 48 | 48 | 44 | 75 | 50 | 604 |
| 2d, | 47 | 54 | 49 | 55 | 57 | 64 | 51 | 30 | 41 | 49 | 493 |
| 3d, | 7 | 4 | 10 | 11 | 4 | 9 | 7 | 8 | 11 | | 71 |
| 4th, | 4 | 2 | 3 | 1 | 2 | 4 | 1 | 3 | | | 20 |
| 5th, | 3 | 2 | 1 | | 1 | 1 | 3 | | | | 11 |
| 6th, | 2 | 1 | 1 | 2 | | 3 | | | | | 9 |
| 7th, | | | 1 | | 2 | | | | | | 3 |
| 8th, | 1 | | | | | | | | | | 1 |
| 9th, | 1 | | | | | | | | | | 1 |
| 10th, | | | | | | | | | | | |
| 11th, | | 1 | | | | | | | | | 1 |
| | 129 | 137 | 143 | 129 | 130 | 129 | 110 | 85 | 127 | 99 | 1218 |

According to this statement we see that one-half of all the cures were effected during the *first* year; nearly one-third in the second, and a seventh in the third year; and that cures occurred in all the following years up to the tenth after the admission of the patients.

In the *Retreat* at York, in England, out of fifty-six patients cured of insanity, twenty-seven cures were effected during the first year, thirteen in the second, three in the third, one in the fourth, five in the fifth, three in the seventh, two in the ninth, one in the thirteenth, and one in the fifteenth. Pinel observes that after three years ineffectual treatment of cases of insanity the chance of cure will be about as one to thirty. *Veitch* states that in 1816 out of twenty-eight cases of *recent* insanity he cured eighteen in his private institution, but out of one hundred and twenty-five *inveterate* cases he cured only five. In the Glasgow institution (in 1819) out of sixty-four recent cases thirty-five were cured, and of thirty old cases only two were cured.

In relation to the liability of *relapses*, in mental diseases, Esquirol observes, that in the Hospital Salpetriére, relapses, according to his experience, have occurred in the proportion of about one out of ten. This agrees with facts stated by

other writers.* With regard to the ratio of *mortality*, it appears from data published, that the number of deaths that took place at York, were one out of nine; at Manchester one out of nine; at Montrose one out of four; at Nottingham one out of eight, and at Exeter one out of twelve.

According to the observations of Esquirol and Georget, the mortality is greater during the autumn than in spring. Of the seven hundred and ninety insane females that died during ten years (from 1804-14) in the hospital Salpetriére, one hundred and seventy-five died during the months of March, April, and May. The number of deaths in June, July, and August, was one hundred and seventy-four; and in September October, and November, they amounted to two hundred and thirty-four; in the three remaining winter months two hundred and seven deaths occurred. With regard to *age*, it appears from the same observations that the greatest number die between the ages of forty and fifty with females; and between thirty and forty years with males.

Our author states that he saw a maniacal female in the hospital *Salpetriére* in whom the mental disease alternated regularly with symptoms of phthisis. When the cough and hectic symptoms were present she was wholly free from derangement of mind, and on the contrary when the phthisical symptoms were absent she was furiously insane. Instances of complication of phthisis with mania have been mentioned by other writers, although Haslam† denies that such a complication has ever occurred, and maintains that cases of this sort are to be regarded merely as co-existing diseases, without any mutual dependance, and that the abatement of the one is never the result of the increase or reappearance of the other.

It appears from the extensive observations of Dubuisson,‡ that maniacal subjects are much less obnoxious to contagious

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* Dict. des. Sc. Med. Art. Folié.

† Loc. Citat. 2 edit. p. 159.

‡ Des Vésanies ou mald. Mentales. Paris 1816, p. 173.

and epidemic diseases than those who are sane. This accords with the earlier observations of Mead, Willis, Cox, Greding, Reil, Rush and others. The most favourable season of the year, for the cure of mental diseases, is autumn; the most unfavourable winter. Mania occuring in spring or summer, have in general an acute course, and are apt to terminate during winter; those that occur in winter commonly terminate in spring.*

*Treatment.*—In France and in England, very little medicine is employed in the treatment of mental diseases. In proof of this observation we need only advert to the following statement of expenses incurred for food and medicines at the Glasgow and Exeter Institutions, for the year 1819.

| | |
|---|---|
| For Meat, - - | £380 |
| Bread, - - | 329 |
| Beer, - - | 200 |
| Cheese and Butter, - | 316 |
| For *Medicines*, - | 18 |

The number of patients treated during this year was 183.

The amount expended at the Exeter Hospital for food, during the year 1819, amounted to £1162.

The expense for medicines and instruments during the same year, was but £33.

In the Institution at Nottingham, during the same year, the expenses for the necessaries of life were £920.

The expenses for medicines, £7.

Fifty years ago the amount of expenses for medicines for the same number of patients, during the same period, would have been much greater, although the proportion of cures performed was then very considerably smaller. Even at the present day, much more medicine is employed in the treatment of insanity in the German Hospitals, than in those of England and France, although the success in the former is

* Esquirol. Article *Folie* Dic. des Sci: Med.

greatly inferior to that which is obtained in the latter.* The truth is, *medicines*, properly so called, are by no means the most powerful agents in the treatment of a majority of mental diseases. Much more is to be affected by *moral* influences,—by a kind and humane treatment, and by comfortable seclusion. It is delightful, says the author, to see the winning and affectionate manner in which Esquirol, Pariset and Wright approach their patients. They enter into their feelings,—take an interest in their real and imagined pleasures and pains, sooth and admonish them in a tone of kindness, and appear among them more in the character of their comforter and friend, than as their physician. It is by a *moral* treatment of this kind, more than by any articles of the *materia medica*, that the greatest good is done in the cure of mental diseases. The cruel and coersive measures that were formerly adopted in the treatment of insane patients are as injurious as they are repugnant to the best feelings of the heart. Humanity and reason combine against the employment of such measures; and the triumph of reason and good-feeling over cruelty and error, is no where more glorious than in the improvement that has been effected in this respect. Instead of subduing the miserable maniac with implements of terror and torture, or of keeping him in subjection with threatening looks and words, and endeavouring to put reason right by drugs, chains, and cells, physicians begin to see that a kindlier mode of management will often call back the unsettled and wandering intellect, when a contrary course would fix it in its wild mood.

In the Parisian hospitals the noisy and unruly are carefully separated from the quiet and manageable patients; and the only coersive contrivance in use is the *strait-jacket*. In Paris this mode of coersion is very common. It is certainly, however, an offensive and oppressive mode of restraining per-

* In Berlin the proportion of cures effected is only about 0,28, whereas in France, it is on average 0,44.

sons in a state of furious mania. Haslam, condemns it in strong terms. He employs instead of it, a belt from eight to ten inches wide. This is passed round the lower part of the body above the arch of the pubis, and fastened on the back with strong buckles. On each side, leather bags are fastened; into these the hands of the patient are put, and secured therein, by means of short manacles. By this contrivance the respiration is not impeded as is often the case with the *strait-waistcoat;* nor is the perspiration suffered to become injurious and offensive, as is sometimes the case by its being absorbed and retained in the waistcoat. Patients may walk about with the *belt* without much inconvenience, and they always suffer it with much more patience than the *jacket.*

A very simple and excellent mode of moderating the violence of a paroxysm of furious mania, is excluding *the light* from the patient. This is daily practised in the *Salpetriére.* When a maniac begins to rave violently, a piece of strong cloth is quickly thrown round the head, and fastened over the eyes. This almost always produces an immediate abatement of his fury, and he may then be easily conducted into his appartment and properly secured. Esquirol, particularly, lays great stress on the soothing influence of darkness on maniacs. Indeed, he carries his ideas concerning the influence of *light* so far, as to maintain that the reputed influence of the moon on insane persons is to be referred wholly to the light which it sheds during night. Without denying the exciting power of light on maniacs, we may nevertheless justly doubt the correctness of this opinion of Esquirol, concerning the lunar influence. We have seen an insane person whose paroxysms recurred at *new* instead of *full* moon, and who consequently could not have been influenced in the way supposed by Esquirol. Our author states, that in Dubuisson's private Institution, there is a man whose paroxysms of mania regularly recur at each period of *new* and *full* moon.

At the hospital Charenton, there are two other means of coersion employed, one of which, says our author, may be

recommended, but the other is in some degree objectionable. The first is a coffin-shaped basket, about six feet long, to which a lid of wicker works fits with the head end cut or scooped out so as to leave the patient's head exposed. Into this basket a mattress is put, and the patient laid on it; the lid is then tightly fixed on, which being scooped out at the top, leaves the patient's head free, and restrains him effectually. The second mode of restraint resembles Rush's *tranquilizer*. It consists of an arm-chair with a high back and a foot board. The arms, legs, feet, and body are fastened to this chair by strong and broad straps with buckles.

Our author found no *rotatory* machine in the Parisian hospitals; although Esquirol mentioned to him such a machine, as among his *piis desideriis;* and calculated on considerable advantage from its employment—particularly in cases complicated with gastric irritation. Although the *rotatotary* machine originated in England, there nevertheless exists, says Burrows, great prejudice against its employment in that country. That it may be used with manifest advantage in some cases, however, experience has fully demonstrated. In the report of the Glasgow institution for the year 1819, it is stated that rotatory motion was employed in a number of cases, and "in some of them with wonderful good effects." It must be confessed, however, that according to the experience of some, very alarming consequences have resulted from rapid rotatory motion. *Warm bathing* is a cardinal remedy in the treatment of insanity in the Parisian hospitals. In the hospital *Salpetriére*, the women use the warm bath two or three times every week, unless circumstances contra-indicating its use exist. They remain in the bath from a-half to two hours. In acute inflammatory mania cold water or ice is applied to the head while the patient is in the warm bath. Dubuisson, in conformity with the recommendation of Hill, and Cox, has applied æther to the head with advantage. This, however, should not be done in a small and close apartment as the evaporated æther will tend to excite the brain injuriously.

Bleeding, says our author, was for a long time practised to a pernicious extent in the treatment of mania. The old established *Traitment de l'Hotel-Dieu*, consisted almost entirely of repeated blood-lettings, which, according to the assurances of Pinel, converted many a case into confirmed imbecility. At present venesection is practised but very rarely in the Salpetriére. Our author, indeed, never saw a patient bled in this institution, although he visited it frequently and for a considerable period.

Esquirol does not carry his dislike to bleeding in mental diseases quite so far as Pinel. In certain acute cases he occasionally employs general blood-letting, though more commonly he prefers the application of leeches to the head.

*Emetics* are but seldom employed by Esquirol, and only when particularly indicated. Haslam is still more opposed to the use of this class of remedies, and censures, in no mild terms, Cox for recommending them. Drastic purgatives are not unfrequently administered in the Salpetriére; and Esquirol is very fond of prescribing anthelmintics in large doses.

Blisters, seatons, issues, and rubefacients, are but sparingly employed by the Parisian physicians in the treatment of insanity. Esquirol was at one time fond of applying moxa to the posterior part of the head in cases attended with great stupor, but he has discontinued the practice.

Of the *narcotic* remedies, Esquirol frequently prescribes a little laudanum when an anodyne is indicated. He never however gives this article with a view of its soporific effect; and observes that sleep is much more certainly and beneficially procured by keeping the patient engaged at some active employment during the day, than by opium.

*Animal Magnetism* was tried on eleven females, but without the least effect; and has never been attempted since.

*Post Mortem Appearances.*—Autopsic examinations are much more common in France than in any other country. Esquirol uniformly examines the bodies of those who die in his institution, and his examinations are always extensive and

complete. He never fails, for instance, to open the spine, and to examine carefully the spinal cord and its envelopes.

But what, after all, have we learned from such researches, concerning the nature and seat of insanity? Notwithstanding the zeal and industry with which examinations of this kind have been pursued, we know no more on these points now, than was known in the days of Hippocrates. Esquirol assured our author that he dissected the brains of more than twelve hundred subjects who had died of mania, and that he did not, in a single instance, discover any organic or structural alteration which is not found in subjects who never laboured under any mental disease whatever. Some very striking appearances were nevertheless observed in these examinations, which the author describes without entering into any speculations concerning their connexion with the previous disease of the mind. In almost every instance, says our author, Esquirol found the two hemispheres of the brain disproportionate in size. In a memoir, in which he mentions this circumstance, he calls it—"*le phénoméne le plus constant et peut-être le plus digne d'attention,*"—the most constant phenomenon, and perhaps the most worthy of attention.* Georget examined Esquirols' collection of crania, and found that out of more than five hundred, nothing remarkable existed in the form of one-half of this number; but that in the remaining half of the collection, considerable deviations from the usual form and structure were found. Where there was a difference in the capacity of the two sides of the cranium, the *right* side was usually the largest. Only one-twentieth part of the crania examined were found to have unusually thick bones. More commonly the diploe of the cranial bones was wanting, so that they were very hard, compact, and shining like ivory.

In accordance with the observations of Haslam, Reil and others, Esquirol, in the majority of instances, found the brain

* Dict. des Sciences Med. Art. *Idiotisme.*

softer than it is in a natural state. Out of forty-four subjects who had died in a state of insanity, he found that in twenty-nine the brain was preternaturally soft; and in fifteen of a hard consistence. This, however, cannot be taken as the regular proportion in the relative frequency of these structural deviations. According to Georget, softening the brain is much more frequent than this estimate, from the dissections of Esquirol, would make it; and from the information obtained by our author, it appears, that at the Bethlem hospital only six brains out of thirty-seven were found to be preternaturally soft, whilst eleven were hardened; so that the relative frequency of the morbid deviations is not to be estimated by such statements.

In a melancholic subject who had died from voluntary starvation, Esquirol found the brain hard and of a violet colour, as if injected with violet coloured wax. Cabanis* give an account of a still more remarkable phenomenon. He states that he saw the brain of a maniacal subject brightly phosphorescent. Ossification in the *dura mater* is, according to the observations of Esquirol, no uncommon occurrence in the brains of insane subjects. Our author saw a considerable ossification of the arachnoid membrane of the spinal cord of a female who had been for many years insane. Esquirol observes, and the observation is peculiar to him, that in dissecting the brains of persons who had been insane, he invariably found a very firm adhesion of the lining membrane of the lateral ventricles, to the adjoining substance of the brain. In several instances Georget found the cerebellum totally disorganized.

Among the abnormal circumstances detected in the thorax and abdomen, Esquirol mentions one, in relation to the position of the *transverse* colon, of a very remarkable character. This portion of the intestinal tube, says he, is very often found sunk so low down as to pass into the pelvis, and fre-

* Des Rapports du Physique et du moral de l'homme, 1. p. 422.

quently to lie in a perpendicular instead of a transverse position. This unnatural position of the colon is most commonly found in persons who have laboured under melancholia. In one hundred and sixty-eight subjects who had died of melancholy, the following were the most prominent morbid appearances found on dissection: viz. Thickening of the membrane of the brain, 2; organic lesions of the brain, 4; ossification of the falx, 3; extravasation of blood with the cranium, 5; organic derangement of the lungs, 65; organic affections of the heart, 11; extravasations in the thorax, 6; perpendicular position of the colon, 33; adhesions and suppurations in the diaphragm, 5; ulceration of the stomach, 6; ulceration of the intestines, 7; worms, 5; tape-worm, 1; organic disease of the liver, 2; gall stones, 7; ulcers of the uterus, 6. With regard to the perpendicular position of the colon, which Esquirol regards as peculiar to persons labouring under insanity, it must be observed that Lawrence asserts, that instead of having found this position of the colon in the insane, he has seen it only in such as were never affected by any mental disease whatever. We perceive from these cantradictory observations, how little reliance there is to be placed on the sweeping inferences which are so frequently drawn from *post mortem* appearances, in relation to the causes and connexions of diseases.

Having given a condensed but interesting account of the various objects which we have noticed, our author passes on to the description of the Parisian hospitals for the reception of lunatics, together with an account of the internal regulations, medical and economical, which belong to them respectively. He also, under this head, introduces short notices of the character and persons of the celebrated physicians who prescribe in these institutions.

*Pinel* was born on the 20th of April, 1745. He commenced his medical studies at Montpellier, where he remained from 1774 to 1778. He afterwards went to Paris, and devoted himself, for upwards of eleven years, to the study

of anatomy, zoology, chemistry and botany, during which period he was also zealously engaged in attending the clinical wards of the hospitals, and in making observations on the cases he there met with. In 1785 he translated Cullens' Nosological Classification, and in 1791 he was appointed physician to the hospital *Bicetre.* In 1794 he was transferred from this institution to the *Salpetriére,* in which he afterwards prescribed as principal physician for more than twenty-eight years. When the French wish to hold up their brightest trophies in the field of surgery, they mention the name of *Desault;* when anatomy and physiology is the theme of their boast, they refer us, and justly too, to the genius of *Bichat;* and when nosology and psycological medicine are brought into question, the name of *Pinel* is mentioned with gratitude and triumph. It was he who first substituted the benevolent, soothing, and rational management of the insane, for the chains, stripes, and various other cruelties, which were formerly inflicted on those unfortunate beings, under the erroneous and revolting idea of chastising them into reason. Pinel was but little addicted to mere speculative or theoretical inquiry. His philosophy was that of Condillac. He professed to proceed from the simplest ideas—from data furnished to the mind by the senses—step by step, to the more complicated and abstract notions of things. Observation was to him the starting place; and the *Nosographie Philosophique,* evinces throughout, the observant, inductive and cultivated understanding of its author.

*Esquirol* was the friend and pupil of Pinel. What the latter began, the former is zealously engaged in completing. He is now in the meridian of life,—actuated by an uncommon zeal for the advancement of medical science—of firm character, amiable in disposition, of a clear and cultivated understanding, and, what is not very common with the French physicians, of extensive professional reading and learning.

Our author observes that the most important and interesting lectures he heard in Paris, were those of Esquirol on mental

diseases in the *Salpetriére.* Every morning, at nine o'clock, he visits the hospital; and as this institution is located considerably beyond the suburbs, he is seldom followed by so numerous a crowd of students as to prevent those who feel an interest in this class of diseases from enjoying the full advantages of his instructive observations as he passes through the wards. "Here," says the author, "I often had occasion to witness the mutual affection which exists between this interesting physician and his patients, and the great and beneficial influence which this feeling had on the latter." On the ground floor Esquirol has a small study and a cabinet, in which, besides a small select library, he keeps his very interesting museum of preparations.

The three public institutions in Paris for maniacal subjects, contain on an average about two thousand lunatics, of these there are about eight hundred constantly under treatment; and one thousand two hundred retained merely to afford them an asylum. Besides these public hospitals, there are two private institutions dedicated to the same class of diseases, viz. the *Salpetriére,* which, as we have already said, is under the direction of Esquirol, and another directly opposite to it, under the management of Dubuisson. E.

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ART. II.—*The Anatomy of the Fœtal Brain, with a comparative exposition of its structure in Animals.* By FREDERIC TIEDEMANN, Prof. in the University of Heidelberg, Member of the Academy of Sciences of Munich and Berlin, &c. &c. Translated from the French of A. I. L. Jourdan. By WILLIAM BENNETT, M. D. To which are added, some late Observations on the Influence of the Sanguineous System over the developement of the Nervous System in general. Edinburgh.

OUR object in reviewing the present work, is by no means critical investigation. The nature of the work, and the character of the author, render it unnecessary and unprofitable. The volume exhibits a series of facts in relation to the most

interesting subject which, at present, occupies the attention of physiologists. The source from which they are derived confers upon them the character of valuable data. We propose, therefore, for the benefit of our readers, to condense into as small a compass as possible the record of facts which is here presented, and we are confident that if we accomplish our design in a manner worthy of the work, we shall not be reproached by those who would associate the *science* with the *art* of medicine, for having devoted a few pages to this subject. Physiology, or the science of life, is the only key to all rational knowledge of the nature and treatment of disease.

The practice of medicine, unless sustained by the intellectual exercise which the *science* of our profession furnishes, sinks into a mercenary trade, and the incurious follower of rules without reasons, differs as much from the intelligent practitioner, as does the unlearned mariner who *uses* his tables and nauticle instruments, from the astronomer who designs them.

In the practice of medicine, however, it is impossible that rules should exist adequate to every occasion, and whoever is ignorant of the principles from which they are drawn, will frequently find his chart to deceive him, and his compass to vary without any means of correcting the error.

Such has been the zeal and success with which human anatomy has been cultivated for many ages past, that there appears but little more to be done in relation to the structure and configuration of the organs which constitute the system. The several offices of many of them have also been studied with complete or partial success. No part of the human frame has been the subject of closer scrutiny than the brain; nothing which can be developed by the dissecting knife, the microscope, or chemical tests, has escaped observation; but although the important relation which its office evidently bears to other general functions has rendered it a subject of particular interest, yet little else has been accomplished than to determine the anatomical features of the organ, and to name

with scrupulous minuteness the several parts of which it consists.

We have indeed some confused notions of the general office performed by the organ, as a whole, but the functions performed by its several constituent parts in relation to each other are as yet wholly unknown to us. We are enabled, at once, to ascribe to the muscular walls of the heart, to its valves, and to its septa, the several offices which they perform, but no one presumes to designate the part which the corpus callosum, the fornix, the striata, or the thalami, contribute to the general functions of the sensorium. Neither are we able to determine the relation of the brain to the rest of the nervous system as we are that of the heart to the circulatory organs, nor the relation which the nervous system generally bears to the rest of the vital fabric with the same certainty that we can that of the vascular system to the same.

So important, however, is the influence which the nervous system exerts over other functions, that the probability is, we shall never be able to accomplish more in relation to the phenomena of life until the functions of the brain and its several parts are better understood. So aware are the physiologists and pathologists of the present day of this fact, that their intellectual efforts are all converging to this point. The experimental inquiries of Philip, Bell, Majendie, Brodie, and others, have already contributed facts which have given new interest to the investigation, and we have reason to believe that if the human mind has not already reached its limit on this subject, we are now on the eve of some momentous discovery, which, like that of the circulation of the blood, is to give a new character to the science of life. We have already observed, that the anatomy of the adult human brain can probably furnish but little more for the elucidation of this subject. Two fertile sources of information, however, remain, the cultivation of which has been reserved for modern physiologists. One of them is the comparative anatomy of this organ, a subject to which Gall and Spurzheim are paying particular

attention. It is obvious that by carefully observing the different degrees of developement of the nervous system, and its different organic modifications in the various orders of animals, and by carefully noting also the number and character of the functions corresponding to them, we shall be able to ascertain the influence which each particular part of the nervous system exerts by thus determining the vital phenomenon which is absent when a particular part of that system is not found, or is imperfectly developed. It is also obvious that the same results may be obtained by observing the order in which the constituent organs are developed in the growth of the fœtus, and the vital phenomena which correspond to them. For instance, it is easy to determine whether the nervous system be essential to the functions of the circulatory, by observing whether the former exists in all animals which possess the latter, or by ascertaining the order of their developement in the fœtal state. If the circulatory organs can be discerned performing their functions before any rudiment of the brain can be ascertained, then we have adequate reason to infer the negative.

In some forms of life no nervous system can be discerned. This is the case in the fœtus of the first month, in vegetables, and in some of the lower animals. By comparison then we can ascertain the general offices which it performs where it does exist, and by noting its successive degrees of developement from the lowest to the highest orders of animals, we may ascertain the part which is performed by such portions as are sometimes wanting.

It is obvious that a wide field is here opened for observation, and that the labours of those who enter upon it must be productive of utility. Of those who have as yet pursued this course, our author is one of the most industrious and successful. The work consists of two parts, one of which treats of the fœtal brain, and the other of the comparative anatomy of this organ. We commence with an abstract of the first:

Our author observes that during the first month of the

fœtus no rudiment of the brain can be discerned, the cephalic and cervical swellings being perfectly transparent. On the fifth and sixth week after conception he found the head to have become voluminous, the rudiments of the extremities to exist, the canal of the heart filled with blood. The head and trunk, however, were nearly transparent; the former contained a rounded pouch which was continuous with a canal in the thorax, both being filled with a whitish and nearly diaphanous fluid. "In two embryos," he says, "it presented slight depressions, transverse and longitudinal, giving it the appearance of small vesicles agglomerated together." The author supposes this to be the nidus of the brain and spinal marrow, those organs being as yet not at all organized. The vesicles correspond to the natural divisions of the brain, and their cavities communicate freely with that of the spine. The parietes of these cavities, which are pretty firm, are evidently the rudiment of the pia mater, as the vessels of that membrane are soon discerned in it.

On the seventh and eighth week the head and trunk have lost their transparency, a whitish membrane is found adhering to the internal surface of the cranium, which is the dura mater, and beneath this, another membrane, the pia mater, containing vessels of extreme delicacy, and enveloping the rudiment of the brain, which was white and pulpy, and of the consistence of the white of an egg. By hardening the organ in alcohol the author was enabled to examine it more satisfactorily; he then discerned the dura mater nearly dividing the cavity of the cranium into two portions, the limit of which was the tentorium cerebelli. The pia mater adhered firmly to the brain and spinal marrow. The spinal marrow was *large* in proportion to the *brain* and to the embryo, and was of nearly uniform thickness. Behind it was marked by a longitudinal fissure, into which penetrated the pia mater, and the bottom of which was a canal occupying the whole length of the spinal marrow, and continuous with the fourth ventricle of the brain. The exterior surface of the canal was composed

of two cords, but without any appearance of fibrous structure. At its superior part, where continuous with the brain, it formed on either side a projection nearly one line in breadth, in front of which it bent forward to the brain, dilating to give origin to the fourth ventricle. On each side of this dilatation arose from the spinal marrow a fasciculus, which projected inward and rested in contact with that of the opposite side, forming an arch over the fourth ventricle. The spinal marrow then gave origin to the crura cerebri, and terminated by bending from below upward, and from before backward. In front of the cerebellum were seen the rudiments of the tubercula quadrigemina, the fourth ventricle was continuous between them, forming the aqueduct of Sylvius. Still before them were the rudiments of the optic chambers, and the third ventricle between them; they rested on the crura cerebri. Before these were eminences to become the corpora striata. A rudiment of the hemispheres existed in two membranes produced from the second pair of eminences. At this period no other parts of the brain could be discerned. The author thinks that nerves may have existed too delicate to be seen. The matter of the brain was *not fibrous* but composed of minute globules.

*Third Month.*—At this time there was discerned in a fœtus prepared as before, the same fissure in the spinal marrow, expanding above to form the fourth ventricle, over which were stretched like an arch, the corpora restiformia, forming the rudiment of the cerebellum. The tubercula were still more developed, and the aqueduct of sylvius was large between them. The optic chambers, the corpora striata, and the rudiment of the hemispheres, a little more developed than the last. The spinal marrow was about one line and a-quarter in breadth in front of the fourth ventricle; the transverse diameter of the cerebellum was about three lines; the mass of the tubercula quadrigemina two lines in length, and one line and a-half in breadth; the length of the optic chambers was one line and a-half, and their breadth one line and three-fourths. The other parts of the brain, as the pons varolii, the corpus

callosum, fornix, cornua ammonis, commissures, &c. were not yet in existence.

The author next examined an embryo of eleven weeks, in which he found the falx and the tentorium formed, and the sinuses containing coagulated blood. The dura mater invested also the spinal marrow, but there was no trace of the arachnoid; the pia mater enveloped the whole. The spinal marrow was augmented where it is continuous with the brain. The same posterior groove existed terminating in the fourth ventricle; "hence," says the author, "it results, rigorously speaking, that the fourth ventricle is a simple dilatation of the canal of the spinal marrow. The spinal nerves existed at this time. In front and below, the spinal marrow was continuous with the crura cerebri; the pons varolii did not exist."

The following were the parts present in the encephalic mass; 1st. cerebellum; 2d. tubercula quadr. not covered by the hemispheres; 3d. hemispheres very small. On the inferior surface; 1st. crura cerebri; 2d. rudiment of the corpora mommilaria; 3d. pituitary gland very small; 4th. junction of the optic nerves; 5th. olfactory nerves; 6th. two hemispheres representing the anterior lobes, also the middle and anterior lobes but little developed.

On separating the optic chambers from each other there was brought into view the posterior commissure, and the third ventricle being a funnel-shaped cavity extending as far as the pituitary gland—no pineal gland nor pedicles.

The surface of the hemispheres was smooth; they evidently represented two membranous vesicles, the walls of which were scarcely one-fourth of a line in thickness. The lateral ventricles existed, and contained a very large choroid plexus, "which formed by a prolongation of the pia mater, flattened on itself, had passed over the optic chambers, and beneath the inferior edge of the membranous hemispheres."

In a fœtus of fourteen weeks, and which was two inches four lines in length from the summit of the head to the inferior extremity of the trunk, the dura mater was strong and

thick, pia mater obvious and very vascular; the arachnoid could not be discerned. The spinal marrow was very large in proportion to the brain; on its posterior surface was the same longitudinal groove, which advanced as far as the interior of the same canal; also a slight longitudinal groove on the anterior surface. Where it bends forward and expands to form the medulla oblongata, the corpora pyramidalia were discerned, no trace of the olivoria; in their place, however, on each side was a cord proceeding forward to gain the pons varolii, which rising from before backward gave origin to the cerebellum. These were the corpora restiformia. The spinal marrow was evidently fibrous. The two cords of the spinal marrow augmenting as they ascended divided into three fasciculi, the corpus restiforme on the outer side, the rudiment of the corpus olivore in the middle, and the pyramidale on the inside, continuous with the crura. The fibres of these last fasciculi were seen evidently to cross before forming the pyramidalia.

Viewed from above downward, the brain presented much the same appearance as in the last. On the inferior surface was the pons still very narrow, the crura cerebri, and in front the large masses corresponding to the mammillary eminences; the petuitary gland hollow and communicating with the third ventricle by the infundibulum; the optic chambers; the olfactory nerve; grooves separating the lobes; nerves coming off, as usual.

The fourth ventricle was seen of considerable size, communicating below with the canal of the spinal marrow, and above with the cavity of the tubercula; near the edge of the cords of the spinal marrow was seen a small eminence which is now regarded as the origin of the acoustic nerve.

The restiformia bending backward formed the cerebellum, sending some fibres to the pons varolii. Neither the hemispheres, nor processus vermiformis could be seen. In a perpendicular section of the cerebellum no part of the arbor vitæ could be seen. Where the restiformia penetrated, transverse

fibres existed, forming the pons and constituting the commissure. The transverse fibres in the pons covered those which were continued from the spinal marrow, and when the former were torn from the latter then were seen.

The fifth pair of nerves was traced from the border of the pons anteriorly across this body to its posterior part.

The valve of vieussens was interposed between the fourth ventricle and the cavity of the tubercula. The posterior valve did not yet exist. The tubercula had begun to be covered by the hemispheres prolonged backward, the pineal gland was present and its stalks arising from the thalami. The corpus callosum was very small. Behind this from the floor of the third ventricle, arose two thin cords, the anterior pillars of the fornix, which proceeding upward united at the posterior part of the corpus callosum, and separating again wound round the thalami to the base of the posterior lobes of the hemispheres, these were the posterior pillars of the fornix, and they gave origin to the corpori fimbriata and the hippocampi.

The thalami rested on the crura of which they are enlargements; their commissure was not yet formed.

The hemispheres were membranous sacs, the cavities of which are the vast lateral ventricles, and the contents, the choroid plexus, very voluminous. These plexuses were prolongations of the pia mater, which penetrated into the ventricles between the superior surface of the thalami and band of the fornix. When the choroid plexus of the lateral ventricle was removed, there were observed the c. striata of their usual appearance; the cornua ammonis looking backward, outward, and downward, corresponding to the posterior pillars of the fornix. The anterior part of the cavity of the ventricle was continuous with the cavity of the olfactory nerve.

The distribution of the fibres of the cerebral substance was the next object of our author's attention, and is one of very considerable importance in relation to Gall and Spurzheim's

account of this organ. The two crura were evidently continued from the spinal marrow, and passing through the pons separated, proceeding forwards and upwards, sending fibres obliquely inwards and upward to unite with each other at the upper part of the tubercula. They then swelled to produce the optic chambers. Some fibres descended to the c. mammillaria. All the other fibres, which were very numerous, passed beneath the optic chambers and proceeded forwards and outwards, spread like the branches of a fan into the membranes of the hemispheres; they were then reflected inwards to form the superior wall or roof of the lateral ventricles, and then descended to gain the pillars of the fornix. By the union of some of them, this corpus callosum was produced. Those fibres which descended to the c. mammillaria, turned from behind forwards in these eminences, and ascended behind the corpus callosum in the form of the anterior pillars of the fornix, to terminate in the posterior pillars or cornua ammonis.

In a fœtus of the fifth month the author found the brain and spinal marrow well developed. The arachnoid membrane could not yet be seen; the pia mater was thick and vascular, adhering firmly to the brain. Entering between the optic chamber and pillar of the fornix, it formed the choroid plexus in the lateral ventricles. It also penetrated the fourth ventricle to form there a choroid plexus. It also covered the spinal marrow and entered its canal.

The spinal marrow was two inches five lines in length, and broadest where it expanded to form the fourth ventricle. The spinal nerves rose as usual on either side. The same canal as before existed, expanding wherever the spinal marrow was enlarged. The s. marrow itself was composed of two large cords, from which were produced backwards and inwards the thin plates, forming the posterior walls of the canal; above these plates opened backward, to form the calamus scriptorius, and still higher the fourth ventricle. It exhibited the three fasciculi as before, in the medulla the pyramidal fibres evidently crossing. The olivary cords extend-

ed in the same manner to join the crura cerebri; the restiformia proceeded downwards and backwards to form the cerebellum. For the first time the vermiform process was seen, and the division of the cerebellum into lateral hemispheres; on its surface were four transverse grooves dividing it into five distinct lobes seen in a perpendicular section, as also the five stems of Reil corresponding to them. There were no branches or leaves, however; the commissures of the cerebellum were evident. The fibres situated on the side of the corpora restiformia and which wound round the spinal marrow in front of which they united, formed the pons; from the anterior stem of the cerebellum the valve of V. extended to the tubercula. The tonsils (spinal lobules of Gordon,) the flocks of Mayo and the valve of Tarin, did not yet exist.

The hemispheres of the brain were smooth; they were considerably developed, but did not cover entirely the tubercula. On separating them were seen on their internal surfaces many commencing convolutions. The four eminences of the tubercula were not yet distinct.

The corpus callosum and fornix had not yet covered the thalami, the former existed in front, beneath which rose the anterior pillars of the fornix; in front of these was the anteterior commissure uniting the c. striata. The two pillars sent upwards and forward two thin plates, which gaining the inferior surface of the corpus callosum gave origin to the septum lucidum. The third ventricle communicated with the ventricle of the septum, in front between the anterior pillars of the fornix. The crura were united together, and also to the corpus callosum, and winding round the thalami were lost in the cerebral mass. The tænia semicircularis was was not yet formed between the striata and thalami. The corpus striatum rested on the crus cerebri. On opening the ventricle the radiation of the fibres of the crus cerebri was obvious.

A perpendicular section exposed the following. The spinal marrow augmented, contained a canal which communi-

cated with the fourth ventricle. The cords of the spinal marrow, the c. pyramidale, the cerebellum and its five stems, the valve of Vieussens arising from the first of them, the cavity of the tubercula much as in the last; thalami very voluminous; the crura of the fornix as in the last. The two optic nerves evidently rose from the unfibrous substance which formed a part of the surface of the tubercula quad.

The author next describes the brain of a fœtus of twenty-two weeks. In this the arachnoid was first seen.

The spinal marrow terminated by a filament extended as far as the os sacrum, and on its sides the spinal nerves descended to form the caudiform expansion. It was three lines broad where it formed the three fasciculi. On examining the two principal cords, the fasciculi were distinctly seen. The pyramidal fasciculus appeared as before. The corpora olivaria had not yet appeared on the olivary fasciculi, which traversed the pons varolii, and united with the crus cerebri; the restiform fasciculi passed backward into the cerebellum.

The hemispheres of the brain were now voluminous, smooth, and without convolutions, and nearly covering the whole of the cerebellum.

On the inferior surface the pons was large, marked with its longitudinal groove, and formed of transverse fibres. The mammillary eminences were at this time confounded together. Other parts presented the same appearance as before. On gently separating the hemispheres, the corpus callosum was seen not yet extending so far back as to cover the thalami and the third ventricle.

The cerebellum was nearly covered by the hemispheres of the brain. Its middle part, or vermiform process, was slightly sunk. On its superior surface were seen deep transverse grooves, and branches were developed on the stems, as appeared by the perpendicular section; the ascending portion of the crus cerebelli, the cerebral valve and the anterior peduncle destined to form the pons, had far advanced in developement. The corpora dentata were present.

The fourth ventricle communicated with the canal of the spinal marrow by the beak of the calamus, and with the third ventricle by the aqueduct of Sylvius. The gray bands of Wenzell were seen on either side of the fourth ventricle. The common mass of the tubercula was partially separated by a longitudinal groove, and rested principally on the middle or olivary fasciculi of the spinal marrow, from which it received some fibres, which bending inwards united to those of the opposite side. These were much increased.

The commissure of the thalami did not yet exist. The optic nerves were traced to the tubercula and the thalami, where they formed a small eminence, the corpus geniculatum, which with the nerve was detached, free from all fibrous appearance.

The walls of the ventricles were found thicker, though the cavities were still large and oblong. The ventricle was completely filled by a voluminous choroid plexus. The hippocampus was a continuation of the posterior crura of the fornix. The corpus striatum wound around the crus cerebri at its exit from the optic chamber; tænia semicircularis did not yet exist. The fibres of the crura radiated in every direction into the hemispheres, some passing through the striata. They were then reflected inward to form the roof of the ventricles; the anterior and middle converged to meet the opposite in the corpus callosum. The posterior were confounded with the posterior pillar of the fornix, and formed the hippocampus major. The lateral ventricle could not be entered except at the opening under the fornix and tænia semicircularis, which gives a passage to the plexus. There were other fibres, which proceeding from the surface of these, where they were reflected, passed to the periphery; they are very distinctly seen in a vertical section of the walls of the hemispheres.

It appears that the hemispheres, at first thin and membranous, each month augument in thickness. This is effected in he following manner. The vessels of the pia mater separate

from the blood which they convey the new cerebral pulp. This pulp disposed in layers from within, outwads chrystallizes in the form of fibres, which are applied to the surface of those previously formed. This is proved by detaching the pia mater from the brain, when there are found layers more or less thick, of the cerebral pulp, adherent to the internal surface, showing that the exterior soft substance adheres still to the vessels. The layer of the cerebral substance adherent to the detached portions of the pia mater, and the superior layer of the brain divested of this covering, are both equally soft and free from all fibrous appearance. Examined by the microscope, they appear formed of very small globules. The cortical substance is not deposited till after birth, on the surface of the brain.

The fourth communicated with the third ventricle through the cavity of the tubercula, and the latter extended to the pituitary gland by the infundibulum, and to the c. mammillaria. From these latter rose the pillars of the fornix. The septum lucidum, course of the crura, anterior commissure, &c. &c. as before.

The fœtus next examined, was one of twenty-seven weeks. The spinal marrow had anterior and posterior grooves. In the middle it was narrowest, and broader where the brachial and the lumbar nerves originated. The canal was less and lined with a thin layer of unfibrous substance, the c. pyramidalia, olivaria, and restiformia were distinct. The transverse diameter of the medulla oblongata was four lines and a-half at the upper part, where also it was broadest; the pyramidalia as before; the olivary fasciculi were covered with an olivary body, composed of unfibrous pulp covering the fibres which passed into the common mass of the tubercula. The external fasciculi or restiformia passed into the cerebellum. The cerebellum was completely covered by the hemispheres of the brain. The lobes described by Reil were completely separated by broad and deep grooves. Almost every part of the cerebellum named by authors could be seen. The cavity

of the organ was still of considerable capacity. The posterior border reflected inward, formed the posterior valve, prolonged on either side into a thin and flattened production. The corpora restiformia formed in the interior of each hemisphere the corpus dentatum, from which some fibres radiated into the stems and ramifications. From the same point other fibres were detached, which passing outwards and forwards, surrounded the olivary and pyramidal fasiculi, and united to form the pons varolii; some fibres coming from the c. dentatum penetrated the tubercula, and formed the ascending portion of the crus cerebelli.

A perpendicular section exposed the stems, the valve, the tubercula, &c. as before; branches and ramifications were present, but no leaflets. Hence the author infers that the cerebellum is developed from within outward.

The fourth ventricle was continuous with the aqueduct of Sylvius. On its floor were seen the gray bands of Wenzell, it had also a choroid plexus.

The brain was larger in proportion to the spinal marrow and cerebellum. The rudiments of convolutions were seen on its external surface; the fissure of Sylvius very deep, from which the olfactory nerve descended.

The crura of the brain, the mamillaria, the pituitary gland, were as before.

The corpus callosum, composed of transverse fibres, extended back as far as the optic chambers.

Within the ventricles the greater part of the contour of the medullary substance was still elevated much above the corpus callosum, while in its complete state of developement it is perfectly on a level with this body.

The lateral ventricle was completely filled with an enormous choroid plexus. The three cornua were developed. The hippocampus major and minor, c. fimbriatum, &c. &c. as before. The tubercula were completely developed. The aqueduct was contracted between the third and fourth ventricles. The tubercula were formed partly by the olivary

fasciculi, and partly by the crura cerebelli. On the lateral part of the anterior pair of the tubercula appeared the c. geniculatum externum, composed of unfibrous substance, and very vascular; the optic nerve was traced into this body, into the tubercles, and into the unfibrous substance; it is then from these three portions that it arises.

The middle commissures of the thalami did not yet exist; pineal gland, its crura, &c. as before.

The tænia semicircularis not yet existing. The two orders of radiating fibres were quite distinct, the one reflected to the corpus callosum, and the other extending to the periphery, and forming a layer over the first, the fibres were covered externally by a soft substance. A thin cord was seen descending from the inferior surface of the optic chambers into the mammillary eminences, where it turned and formed the crus of the fornix. The ventricle of the septum communicated with the third ventricle between the pillars of the fornix. The nerves were very voluminous in proportion to the brain.

The author next proceeds to describe the brain of a fœtus of thirty-four or thirty-five weeks. At this period the interior organization of the brain is complete, all its constituent parts being present, and no changes taking place after this period but in volume, and in the corticle periphery which is not yet developed.

The spinal canal still existed but much diminished by a soft substance on the interior walls; the fasciculi, the pons, &c. as before.

The cerebellum was perfect in form but the leaflets were not at all developed.

The two hemispheres of the brain covered the cerebellum and extend further back; they were every where traversed with furrows. The aqueduct of Sylvius was still more contracted. The pyramidal fasciculi issued from the pons larger than they entered, and diverged into the brain in the form of crura.

*Fœtal brain of the ninth month.*—The spinal marrow extended to the third lumbar vertebra, where it formed a caudiform expansion. The dorsal portion was something more than one line in breadth; at the origin of the crural and brachial nerves its diameter was three lines; that of the medulla oblongata five lines.

The canal of spinal marrow small; the three fasciculi as before. The cerebellum was one inch four lines in breadth; its longitudinal diameter six lines and a-half on the vermiform process, and nine lines on the hemispheres. The posterior notch very large. On its surfaces were numerous grooves, the deepest of which separated the lobes, others the fasciculi, and the shallowest the leaflets or plates. All the minute parts of the organ were developed.

The corpora restiformia gave origin to the rhomboid bodies, from which arose the medullary stems; and from each arose the crus cerebelli; the rhomboid bodies also gave origin to the superior peduncles, between which was the valve.

The brain was three inches four lines long, and two inches seven lines broad; furrows and convolutions distinct. The commissura mollis was formed.

It is impossible to establish a distinction between the cortical and medullary substance of any fœtal brain. Its component parts are formed of a homogeneous, reddish-white substance; this tint arises from its vascularity. The corpora striata in the fœtus are of a uniform rosy tint.

According to our author the arachnoid membrane, as described by Bichat, is a complete serous sack adhering to the dura mater, and reflected over the brain, following the nerves to where they pierce the dura mater, and then reflected, as is the interior lamina of the pericardium, over the vessels of the heart. It neither enters the convolutions of the brain nor the grooves of the cerebellum. The denticulated ligaments are folds of this membrane. Between the folds of each ligament is a fibrous filament which passes from the internal surface of the dura mater to the spinal marrow. All these

fibrous filaments descend on the lateral parts of the spinal marrow to the surface of the pia mater, between the anterior and posterior roots of the spinal nerves.

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We shall review the remainder of this work, containing general considerations on the different parts of the brain, with a comparative view of their state in man and animals, for our next number.

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ART. III.—*Further Observations on the Lateral, or Serpentine Curvature of the Spine, and on the Treatment of Contracted Limbs; with an inquiry into the effects of various exercises and other means which are used to prevent or cure these deformities; being a Supplement to the work on Distortions of the Spine and Bones of the Chest.* By JOHN SHAW, Surgeon and Lecturer on Anatomy. London, 1825. Octavo, pp. 196.

MR. SHAW is perfectly right in his assertion that in relation to diseases of the spine "many important points are still undetermined." We are certain from our own observations that the mass of our professional brethren are far better acquainted with most other departments of surgery, than with this, which is daily becoming of more importance to the inhabitants of our country. Distortions of the spine, from whatever cause they may originate, or with whatever condition of the parts they may be associated, are almost uniformly treated on the same principles. We have frequently been called upon to observe the unfortunate cases of young females and children who had been tortured and enfeebled for months by issues, low diet and close confinement, when nothing but general debility, or a relaxed condition of the vertebral muscles and ligaments existed. The fact is, Mr. Pott's observations on that kind of distortion which arises from caries have been generally read in this country; and few practitioners have thought it worth their while to inquire more particularly into the nature of the va-

rious affections of the spine,—all of which they appear to consider as one, and the same kind of disease.

It has always been to us, however, a matter of surprise that any observer could ever confound appearances of so directly opposite a character with each other; and still more, that after persevering awhile in an improper course of treatment, the ill consequences of which could hardly have escaped detection, some degree of inquiry should not have been instituted into the causes of such a circumstance. In our own practice we have always been able to decide at first sight respecting the nature of each individual case. That kind of curvature which results from caries, is always marked by a sudden or angular distortion, and the trunk is almost always thrown directly forwards in consequence of the bodies of one or more of the vertebræ being destroyed by the caries. Sometimes, however, although but very rarely, the caries begins in the transverse and articulating processes, in consequence of which the direction of the curvature is lateral. We have as yet only seen one case of this latter kind of caries, and then the suddenness of the distortion taken in connexion with the other symptoms, rendered its nature at once evident. Now all those kinds of distortion of the spine which do not proceed from caries, are characterized by a real *curvature* of the most distorted part, in which no angular or sudden deviation from the natural direction can be discovered. The distortion is, moreover, almost universally from side to side; and as two or more curvatures can be distinctly detected in different parts of the whole column, that contorted appearance, to designate which the term *serpentine* has been used by Mr. Shaw, is produced. We should observe, however, that in some few instances we have seen real curvatures of the spine looking anteriorly and posteriorly, so as to distort the trunk from before backwards, and vice versa. We have now a little girl under our care whose shoulders are thrown backwards so much by a posterior concavity of the spine, as to be approximated within a few inches to the sacrum whenever she attempts to stand, or walk.

We have also in mind two cases of the opposite curve, in which the back is exceedingly convex, and the sternum is nearly approximated to the symphysis of the pubes. But no difficulty has ever been experienced by us in distinguishing such cases. Independent of the broken-backed appearance which is peculiar to the distortion from caries, there are other and still more striking characteristics, which it may not prove amiss in us to notice.

In caries of the spine there is always a tenderness, and often severe pain, under the excitement both of motion and of pressure. During the life of the patient, heat, swelling, and redness, are sometimes present in the surrounding soft parts; and on a *post mortem* examination all the signs of vascular engorgement are exhibited in the affected vertebræ and their included membranes and nerves. Abscesses frequently form, in consequence of the discharge from the carious surface infiltrating into the cellular tissue; and as these are generally carried by gravitation to dependant and remote parts, so as to produce inguinal or femoral swellings, their connexion with the caries is sometimes overlooked by practitioners. The most striking characteristic of this kind of disease, however, is the peculiar paralytic affection of the lower extremities, which Mr. Pott rightly attributed to the vascular engorgement and inflammatory irritation of that portion of the spinal marrow included within the affected vertebræ. It cannot proceed from simple pressure on the spinal cord, because it is wholly unlike the common kind of palsy that is produced by that cause. It is marked by a rigidity instead of a relaxation of the muscles, and is evidently of a neuralgic character, such as we know can only proceed from some cause of irritation in the nervous system. There is, moreover, another strong reason why we should not attribute this symptom to the mere distortion of the spine, *i. e.* in all those kinds of distortion which are not accompanied by inflammation or caries; no matter how great the distortion may be, there is never any actual paralysis of the extremities.

For the purpose of still further contra-distinguishing the simple distortions of the spine from the disease characterized by the above circumstances, we need only observe that they are not necessarily accompanied by pain, and even tenderness, under pressure; nor does motion or exercise of any kind ever prove injurious, except when carried to excess. Abscesses do not form in connexion with such curvatures; nor does paralysis ever take place in the inferior extremities. The hectic irritation, which is always present in the last stage of caries, is also wanting in all cases of simple distortion. In short, every material circumstance is so different in these diseases, that a man with his senses about him can hardly be led into a mistake, provided he takes the trouble of attending to the above diagnostic signs, and of making only a superficial examination.

As to the general principles which should govern us in the treatment of these affections, we can hardly conceive how so much diversity of opinion could ever have obtained. It is an unpleasant truth to be obliged to tell, however, that there are almost as many modes of treatment as there are practitioners to put them in execution. Some, as we have already observed, treat all kinds of distortion of the spine on the same principles which Pott laid down for the management of caries. Others confine their patients rigidly to the horizontal posture, for many months together; while many depend wholly on the use of machinery and artificial supports. In some places starvation and drastic cathartics have got into fashion; while in others a full diet, and a liberal use of tonics and corroborants are in as great request. Active exercise, and frictions are extolled by some practitioners; and many place their confidence in alteratives, a careful attention to diet, and frequent alternations of rest, with varied exercise. Almost every possible mode of exercising, as well as of supporting, the muscles of the spine, has been resorted to. Slings have been worn on every side; weights have been carried on the top of the head and on the shoulders, before and behind; and, on opposite principles, splints, stays, and compressers of all sorts, steel springs and bandage-caps, Le Vacher's machinery, with

various modifications, and rolling chairs, have all been employed by different individuals with the same pretensions to success. But this enumeration does not comprehend even the one-half of the whole list of remedies and preventatives which might be mentioned. A large number of empyrical contrivances and panaceas, and a curious variety of domestic practices, are still in use among the wise people of merry old England, as well as in this country.

We presume it will not be required of us to undertake to demonstrate the absurdity of most of these different modes of treatment. It will no doubt be recollected that, as in other extensive groupes of diseases in which the individuals resemble each other only in some striking external characteristics, quite dissimilar, and very opposite kinds of remedies will often be required for the cure of particular cases that differ from each other essentially in their proximate causes and constitutional peculiarities.

Although Mr. Shaw's attention has been wholly confined to such distortions of the spine as are unaccompanied by caries, we have judged it necessary to give this general sketch, as preliminary to an immediate analysis of his work, on account of the confusion which, as we have already observed, has generally prevailed in the minds of practitioners in regard to this interesting subject. As will be perceived from the title, Mr. Shaw has heretofore published on the same subject. We regret that we have not been able to procure his former work; indeed we cannot ascertain whether it has ever arrived in this country. The following extract from the preface will, however, give some idea of its nature.

"The work to which this is a supplement is comprised in an octavo and a folio volume. In the first I have endeavoured, by entering fully into the pathology of the spine, to demonstrate certain effects of distortion, and to prove that the *lateral curvature* does not depend so often on a specific or constitutional disease, as upon causes which may be counteracted. The method of treating each variety of distortion is particularly described.

"In the folio, which contains thirty-four figures, with full explanations, there are engravings of thirteen specimens, exhibiting so many varieties of curvature of the spine. To these are added sketches from the living body, in illustration of the causes and of the changes produced in form by the different degrees of distortion, with etchings to explain the various mechanical contrivances which have been found useful in their treatment."

Whether the author paid any attention or not in his former volumes to those distortions which arise from rickets, mollities ossium, scrofula, &c. we do not know. In the present supplement, however, he discusses such circumstances only as are connected with simple distortion from relaxation of the muscles and ligaments of the spine. This variety of the disease occurs most frequently in young girls who have been brought up within doors, and in a delicate and restrained manner. The first symptom by which the attention of the parents is called to the case, is an apparent inequality in the size and shape of the shoulders. The breasts are also rendered unequal when the disease occurs about the age of puberty, and the hips always appear more or less deformed. The shoulders and hips which are on the opposite sides of the body are similarly affected, so that if the right shoulder projects the left hip will certainly appear to be enlarged. The right shoulder, according to our author, is most frequently enlarged; and when the scapulas are compared with each other in such cases, the right is generally found farther removed from the spine than the left, with its inferior angle lying flat upon the ribs, while that of the left projects. The loins are also always curved on the opposite side, so as to produce the following appearances:

"When a girl so affected is in certain positions, one leg appears shorter than the other; when she walks, there is not only a constrained position of the head and neck, and an inclination to one side, but there is also an inequality in the step, so that

the body is carried obliquely forwards, or with one side rather more advanced than the other. It may be frequently observed, that girls in this condition have a habit of putting one arm behind the back, and taking hold of the inside of the other elbow, thus assisting to balance the figure by pulling down one shoulder and elevating the other.

"If the back be examined, the spine will be found curved nearly in the form of the Italic *f*, and perhaps with a slight bend outwards, which will be most observable in the loins, and especially when she is sitting. The whole of the right side will be of a rounded and barrel-like form, while the left is diminished and contracted, the ribs being closer together than is natural. There will also be a depression or sinking in of the right, and a fulness between the ribs and hip of the left side, so that the whole space between the left hip and arm-pit is nearly in the same line, and considerably shorter than the space between the same points on the right side. If the girl hold both arms above her head, the difference in the shape of the two sides will be more distinctly marked; and when the arms are brought down close to the sides, we may see between the left side and arm, but not between the corresponding parts on the right.

"In consequence of the alteration in the state of the shoulders being the first symptom of deformity observed, it is generally, but erroneously, supposed that the dorsal part of the spine is the first distorted. Indeed those who have lately written on this subject have fallen into this error, and have described the curve at the loins as the last which is formed. In cases of *diseased* vertebræ there may be a curve only between the shoulders, but it invariably happens, in the common lateral curvature, that where one shoulder is protruded, there is also a curve at the loins; and I have shown by diagrams in the preceding volumes, that this curve is not only the first formed, but that those in the upper part of the spine are consequent upon it. When the practitioner, under the idea that the dorsal part is the first affected, directs his attention principally to it, he is apt to neglect the root of the evil; for as the upper curves are the consequences of the lower, it almost necessarily follows that if the lumbar part can be made straight, the dorsal and cervical verte-

bræ must also become so; if they did not, the head would be carried to one side. By taking this view of the formation of distortion, I was led to attend more to the means of remedying the curve at the loins than that at the shoulders, and I have found by experience that I was practically right; for the only instances where the amendment of the curve between the shoulders has not followed the removal of the bend at the loins, have been where the upper ribs were much misshapen, or where anchylosis had taken place between two or three of the dorsal vertebræ; but even in those cases, the curve which remained between the shoulders has been so short and so acute as to have little effect on the general figure. It is the curve at the loins, much more than higher up, which gives the peculiar appearance to girls who are distorted; for, as this curve is near the base of the column, it throws all the parts above out of their natural line, and also affects the motions of the legs, as the great muscles which rotate and move the thighs forward rise from this part of the spine. This is probably the cause why girls who are only slightly distorted, generally turn one toe out, and the other in, while walking or running.

"The above description will be found to correspond with the condition of the spine and ribs when the distortion is very slight; but a little increase in the curvature of the spine produces a considerable change in the general appearance. The effect is most remarkable in the alteration of the position of the right scapula; for this bone, instead of being farther removed by the increase of the curve, is brought nearer to the spine; and hence, although the right shoulder be higher than the left, it is not now so broad. But there is considerable variety in the state of the shoulders, even in cases of slight distortion:—In some instances, the lower angle of the right scapula projects, so that the hand may be put between it and the ribs, while in other cases the scapula clings close to the ribs, and gives a roundness instead of a flattened appearance to the shoulder."

Some interesting facts in relation to the appearance of the muscles of the spine, are detailed in the subsequent pages of the first chapter. The change in the relative position of the

transverse processes will of course affect the situation of all the muscles which are inserted into them; and thus great inequalities in the apparent size of the opposite sides of the back be produced. In the usual kind of distortions, *i. e.* when the right shoulder projects, the muscles in the left loin being raised, or projected, give it a swollen appearance, while those on the right side being depressed, leave a hollow. The muscles on each side of the cervical vertebræ are exactly in the reverse condition, as the twist of the spine on its axis is there in the opposite direction. Machine-makers mistake these apparent swellings of the muscles for tumours, and endeavour to repress them by springs and compresses. Mr. Shaw relates a case where a practitioner also once made the same mistake, and undertook to disperse the imaginary tumours by bleeding and blistering.

These appearances of muscular swellings have been referred to an actual increase of substance, by those who consider distortion of the spine to depend on an irregular action of the muscles. The absolute and permanent shortening which some of the muscles in such cases undergo, is also referred by the same pathologists to the unequal contraction, by which the distortion is supposed to be produced. Mr. Shaw, however, does not conceive this to be the effect of contraction, but of an accommodation of the muscles to the altered shape of the skeleton. "The muscles do not *produce* the distortion, but become altered in form *in consequence* of the distortion." He thinks that the idea that the muscles on the concave side of a curvature are more powerful, and more contractile than those on the convex part of the curve, has originated from the consequences of distortion having been mistaken for the cause. He asserts that he has proven in the former volume that the muscles on the concave side are not the strongest; and that, therefore, there is no foundation in the doctrine which he combats.

He contradicts the idea, too often expressed by surgeons of eminence, that this affection is of little consequence, and

that if the general state of health be attended to, a girl may *outgrow* such a distortion. "It must indeed be obvious to all who have attended to the subject, that if the disposition to curvature be not counteracted in a girl growing at the rate of an inch in two or three months, the new growth, instead of adding to the height, will only add to the degree of distortion." "A spine slightly distorted in a growing girl, may be made straight; but if it be neglected (however great may be the attention to the state of the health) the curve will become rapidly worse; and if it be permitted to increase to such a degree as to render the ribs angular, it is very doubtful whether a perfect restoration of the form can ever be effected."

As to the proximate cause of this distortion, Mr. Shaw does not appear to locate it in the bones, any more than in the muscles: at least he does not attribute it to any constitutional vice, or organic derangement of the solids. He seems to believe that it generally originates from a habit of standing, or of supporting the chief weight of the body on one leg, which is a natural position of ease, and gradually produces a slight curve at the loins. Sitting at the writing-desk with the body twisted, and one shoulder elevated; sleeping on one side in a feather bed; playing on the piano, and especially at the harp, all contribute, also, to the production of this disease. It is not to the position of the shoulders, however, that he imputes the mischievous consequences of such postures. "The more I see of this serpentine curvature of the spine, the more I am convinced, that although the distortion will be always much increased, and occasionally produced by certain positions, it is generally caused in the first instance *by the yielding of the lumbar portion of the spine to the superincumbent weight.*"

Mr. Shaw does not think that this kind of distortion is caused either by bad health, or any peculiarity of constitution. He thinks that its frequent occurrence among girls who scarcely ever had a day's illness, is strong evidence of this.

He also adduces the fact, that although the poor in large towns are subject to various diseases of the spine, yet in that class the description of lateral curvature, which is so frequent among young ladies, is rarely seen; and when it does occur among the poor it is generally accompanied with some acute disease of the vertebræ, or is, to a great extent, combined with rickets or scrofula.

"One of the most important and difficult questions in practice, is to distinguish between the cases where a scrofulous taint in the constitution is the predisposing cause of distortion, and those in which the curvature of the spine is solely owing to fortuitous circumstances. I hope to be able to show that much good may be done in both description of cases; but if the distinction between them is not made we shall be frequently mistaken in our prognosis."

This kind of distortion rarely, if ever, occurs among the females of warm climates, where the clothing is always worn loose, and the figure is never confined by stays, or other mechanical contrivances. Mr. Shaw thinks that this exemption cannot arise from the effects of the climate merely, because in cold as well as in temperate latitudes, the lower orders of females are also exempt from the disease. Nor can it proceed from the circumstance that children are not in the habit of taking severe exercise in hot countries, because the romping and industrious girls in the country are not more liable to distortion. The most probable explanation is, that they are not subjected to the same restraints and discipline as the females of Great Britain and this country. They are permitted to indulge more in the recumbent posture, they spend less time in sitting and standing, and while young, are not obliged to act so much in opposition to the feelings natural to their age as our females are, in the acquirement of what we call accomplishments. In preventing deformity, the great secret appears to be, as far as we can gather it from the volume before us, to regulate with particular care the states of

exercise and of rest, so as to preserve the proper balance between them. At the same time it is especially necessary to take care that the condition of rest, or relaxation, shall not be indulged in by remaining either in an erect or twisted posture.

The following extract elucidates Mr. Shaw's views so clearly, that we give it entire:

"As long as a child continues in a state of nature, that is, while it is permitted to run freely about, and before it arrives at that age when the parent is induced to pay particular attention to its figure, the form is fine and perfect; but about the age of nine or ten, what may often be truly called its miseries, commence. Education is seriously begun, and the girl is no longer permitted to indulge in that playfulness which is not objected to in boys; indeed, it often happens that the first lesson a young lady receives, is an admonition that she is not a boy: when she walks, or when she sits, particular attention is paid to her manner, and the point most generally insisted on is, that she shall keep herself quite erect. For this purpose, or to give the chest a certain form, she is incased in a pair of stiff stays. Girls are thus early put under restraints not natural to their age. This, in some degree, renders them artificial, which is increased by the restrictions which are unavoidable in the acquirement of certain necessary accomplishments.

"If such habits be unnatural to the time of life, we cannot wonder that there should be a deviation from the natural growth of parts. It is not extraordinary that a child has its bowels disordered when its natural diet is changed; but we are apt to think it strange that the figure should not continue to grow as well *when we take great care of it*, as when the child was romping, and when no attention whatever was paid to its form. To set the bowels right, a variety of family recipes are often given, while the diet is neglected; but they are as ineffectual in restoring the natural tone of the digestive organs, as the staymaker's contrivances are in mending the shape. In both instances we endeavour to overcome nature, or to set it right, by artifices, and often by artifices that are ill calculated for the purpose.

"Perhaps the reader is now prepared to admit the following view of the causes of the common slight curvature, when it occurs in a girl who, although not of a bad constitution, is listless, easily fatigued, and unwilling to take active exercise. The first cause which I would assign is the want of sufficient general exercise, and especially of that which acts more immediately on the muscles of the back; the second, on the almost necessary yielding of the lumbar portion of the spine to the weight of the upper part of the body, if the girl be allowed to sit at work, or practise at the piano-forte for hours without any artificial support; the third cause I would name is the habit of lounging or balancing the body on one leg; the fourth, the habit of sitting awry while writing or drawing; the fifth, the habit of sleeping on a soft bed and with a high pillow; the sixth, the more frequent use of the right than of the left arm; and, lastly, I would assign as a cause of curvature most of the attempts that are made to correct the figure or to model it into a certain form. As so many of the means employed for this purpose, and for counteracting what are considered the disposing causes to distortion, frequently increase, and even produce the curvature, it may be useful to endeavour to exhibit these effects. I am therefore confident, that to those who are interested in this inquiry, no apology is necessary for going, at some length, into the consideration of the *use of the inclined plane; of the utility of stays and similar contrivances; of the manner of sitting; of the means generally employed with the intention of preventing or curing a stoop; and of the effects which certain exercises produce on the form.*"

On the use, or rather abuse, of the inclined plane, our author makes some valuable observations. It has now become a fashionable practice in England, not only to confine patients afflicted with every kind of spinal disease to the horizontal posture, but also to resort to the same plan as a means of prevention. A beautiful English lady informed the writer of this article, some months since, that she had been brought up in a boarding school where sixty young girls were forced to lie with herself six hours every day on the hard floor, for the

purpose of keeping the back straight and improving the figure. We need not say that Mr. Shaw deprecates this abominable practice as exceedingly absurd and injurious. Instead of preventing, he asserts that it increases the liability to this disease, and reason and common sense must concur in the same conclusion.

However useful the horizontal posture may be in such cases of distortion of the spine as are attended with scrofulous derangement of its organic structure, or with any species of inflammation, our author insists that it always proves injurious to the true serpentine curvature, when it is persisted in for any length of time.

"The practice of laying a patient on the back and in an inclined or horizontal position for months, and even for years, which has of late prevailed, as a method of cure for all kinds of curvature of the spine, and more particularly the lateral, has been founded on the idea, that the distortion depends on an undue contraction of certain muscles of the spine, and on a diseased state of the vertebræ. Taking this view of the cause of distortion, it was imagined that by keeping a patient constantly at rest on an inclined or horizontal plane, the irritation proceeding from the supposed disease of the bones would be relieved; and the muscles of both sides being kept in a state of quietude, would be gradually reduced to the same standard of strength, so that in a certain time the equilibrium in their actions would be restored. But the ideas on which this mode of treatment has been founded are completely erroneous, and there are numerous facts to prove that when put into practice it has completely failed. Is it not surprising that keeping the body in one position should have been proposed as the best method of curing a defect in the spine after the admission that the distortion is frequently consequent on weakness, and that if any part of the body be allowed to lie unexercised, that it becomes deteriorated? for this plan is, of all others, the most effectual in rendering the body weak, and in preventing those muscles on which the support of the spine depends from performing their natural functions. The bad effects of such a method of treatment

are gradually becoming evident, and the use of the inclined plane is quickly falling into disrepute; for even where it at first seems to be useful (as in cases of slight distortion attended with great debility,) it is found that although the girl may, perhaps, become straighter after having been confined to the horizontal position for months, she does not after a time gain strength, but on the contrary becomes so weak as to be scarcely able to walk or stand; and when she attempts to sit up without some artificial support, she sinks almost double, or, at least, into a state worse than she was in when she first lay down."

Four interesting cases are detailed, in which the ill effects of this plan of treatment are forcibly illustrated. The first case is that of the daughter of a country gentleman, fifteen years of age, who had been confined two years on her back. Her ribs had become distorted "to an extraordinary degree," her spine was very crooked, and she was so weak as to faint even in the sitting posture. "It appeared that her debility was the effect of confinement, and not of disease, for having put her on an entirely different plan of treatment, she became, in *the course of a few weeks*, as robust and as active as any girl of her age.

The other three cases are so interesting that we will insert them entire.

"The second instance was the daughter of a gentleman in a neighbouring county. From the history given by her mother, I learned that she had at first merely the slight lateral curvature, which should not have confined her to her couch for a day. When I saw her she had lain on her back on the plane for eighteen months: she could with some difficulty walk across the room, but could not stand without being supported. The spine appeared only a little distorted while she lay on her face, but it became completely curved when she stood up, and the ribs were more compressed than we find them in cases where this practice has not been pursued, so that I have no hesitation in asserting, that the distortion in this instance was also much increased by the confinement to the plane.

"This young lady had all the appearance of full health, and of being strong, but the appearance was deceptive, for it was produced by fat, not by healthy and vigorous muscle, as might be proved by taking hold of her arms, and still more by the tottering manner in which she moved when raised from her couch.

"That this debility was, as in the last case, the effect of the confinement and not of any disease, may be inferred from the following circumstance:—

"After a consultation on the state of her spine, her father went into another room to hear the opinions of the surgeons. On coming back he found his daughter skipping about the room, dancing the steps of a quadrille. 'O, papa,' says she, 'I know I am to be laid on my back for two years, so I am taking my last quadrille.' This shows that there was not at first any disease, nor even any tenderness of the vertebræ, which should have required rest; and yet this fine girl was not only condemned to lie on the plane for a year and a-half, but her spine was even repeatedly blistered to remove a supposed disease of the vertebræ. I need not enter into a description of the plan of treatment which was followed by this young lady, as it was nearly the same as that described in the chapter on the mode of treating confirmed lateral curvature. By pursuing the system steadily, she quickly acquired strength, and her figure was in a few months so much improved, that her father, on coming to town to see her, could scarcely discover any distortion.

"The subject of the third case was a gentleman who was more than twenty years of age, and had been suffering from distortion for nearly twelve years. From the advice he had received, he had so completely confined himself to his couch, that he had scarcely left it five minutes, at any one time, during several months preceding my visit, (he even slept on it,) and for several years he had never risen from it, unless he was at the same time supported by one of the collars that are used by Mr. Chesher. When I first saw him, he could not raise himself to receive me, and on begging him to show me how long he could support himself in the sitting posture, he made the attempt, but could not continue in it above half a minute, without suffering from a dreadful sense of suffocation. While he lay on his face,

the lumbar part of his spine appeared straight, but it became twisted the moment he attempted to sit up. I immediately changed the plan of treatment, during the course of which some very curious phenomena, with regard to the action of certain muscles, occurred: these I have endeavoured to explain in the chapter on the means of remedying stooping. The system pursued was so successful in restoring strength, that in the course of a few months, this gentleman, who had been confined to his couch or encased in iron instruments for nearly half his life, was enabled to rise, to throw aside all his artificial supports, and to partake of the amusements both of town and country.

"The fourth instance is particularly interesting and important, as illustrating the danger of erroneous theories when they are supported by the authority of eminent men. The patient was the daughter of a country banker, and nearly related to some of the highest medical authorities in England. From the history given to me by her mother, I concluded that her spine had been at first affected nearly in the same manner as those of some delicate children, and which by proper management may almost always be remedied. But, unfortunately for this young lady, as soon as it was discovered that her spine was distorted, she was laid on her back; and, notwithstanding a confinement to the plane for years, or, I should rather say, in consequence of this confinement, the curvature of the spine became gradually worse, and, when I saw it, was almost irremediable.

"Although her parents had observed an obvious difference for the worse, when the spine was examined from time to time, they were induced to persevere on finding that the plan was approved of by some of the most eminent men in the profession, and on being flattered by repeated assurances held out to them, as I have known held out to others, that their daughter would get up in a few months quite recovered. But often as this promise has been made, I believe it was never yet fulfilled in a case of common lateral curvature; and in support of this assertion I have the authority of one whose opportunities of seeing such cases have certainly been greater than those of any other man. I allude to Sir Astley Cooper, who told me, while in consultation

on the case of this young lady, that he did not know a single instance of a girl being cured by that mode of treatment."

Notwithstanding the general opinion that the change which the constitution undergoes at the age of puberty, will arrest the progress of this disease, Mr. Shaw asserts that distortion of the spine often increases after the age of twenty-one. Of course the hope which parents are apt to indulge, that the spine will become fixed at that age to the entire check of the disease, is altogether fallacious; and nothing but an immediate attention to the condition and habits of the patient can ensure a fortunate result.

Our readers are by this time no doubt anxious to inquire what the treatment is which Mr. Shaw recommends, and has practised so successfully. There is no particular or connected account of it given in the volume before us, but as far as we can gather his meaning from detached expressions, it consists in avoiding the injurious habits and practices above detailed, and improving the tone of the muscular system by frictions, and appropriate exercises, and above all, by alternating the exercise, with short and frequent periods of rest, in the horizontal posture. He prefers a mattress, or sofa, to the inclined plane or board, for the purpose of resting, at occasional intervals of from half an hour to an hour each, as the sensation of fatigue on the part of the patient may require. The inclined plane is useful only so far as it supplies rest and support to the body. It is much better, therefore, to cover it with cushions, or a mattress, that a girl may, by reclining on it, be really at rest after a long and weary lesson or fatiguing walk.

Our author makes some very excellent observations on pains of the back, considered as a symptom of spinal disease. Practitioners too often mistake the pains from debility for the effects of inflammation of the bones and ligaments. Acute pains are occasionally produced from the mere pressure of distorted bones on the nerves or viscera, which are also some-

times mistaken for the same affection. The following extract will illustrate the importance of attending to these circumstances.

"I have seen several patients who had suffered severely from the nature and cause of the pain having been mistaken. A young lady was confined to the horizontal position nearly a year, and repeatedly blistered, because a weary and dull pain in the lumbar part of the spine had been considered symptomatic of a commencing disease of the bones: how long she might have been kept in that position is scarcely possible to imagine, for as, at the end of four months, she felt the same pain when she attempted to walk, it was supposed that the inflammation was not subdued, and she was accordingly ordered to submit six months longer; and even at the expiration of that time, matters being still in the same state, she was laid a third time on the board. Soon after this I saw her, and having learned the history of her case, and made a careful examination of her spine, I was so much satisfied of there never having been any disease of the vertebræ, that although the same pain was felt when she sat up, I put her on a plan of treatment very different from what had been pursued. In the course of a short time the pain ceased, and she became rapidly strong, and improved in appearance. But, notwithstanding the issue of this case, it would be a more serious error to mistake the pain consequent on inflammation of the bones for that which is usually attendant on lateral distortion. When the vertebræ are actually diseased there is generally a train of symptoms, in addition to the pain, which will assist us in discovering the nature of the case. It is, however, sometimes difficult to determine whether the pain is merely the effect of weakness, or of a slight inflammation; and this difficulty I have found principally to present itself in cases of distortion in boys; for as they are so little exposed to the causes which produce distortion in girls, we are led to suspect that those who become crooked have a peculiar weakness in their osseous system, and therefore that their vertebræ may be more than usually liable to the scrofulous inflammation."

From the tenor of our author's observations, as we have thus far detailed them, it will be concluded that he is of course opposed to the use of stays and all other mechanical contrivances, which prevent the action of the muscles of the spine, or obstruct the motions of the body. He does not think, however, that they should be left off suddenly and altogether, after a young female has been accustomed to their use a long while. The consequences of such a procedure would certainly prove injurious in every case, as the back would immediately yield under the superincumbent weight. The apparatus, of whatever kind it may be, should at first be slightly loosened, and afterwards be applied more and more lightly, until the muscles have gradually recovered their powers. In some cases it is even necessary to make the stays more stiff, and to lace them more tightly than before for the purpose of supporting the body. But this should only be done after a long sickness, and continued no longer than until the muscles have begun to recover their powers.

The following observations on the practice of wearing stays are very sensible:

"But notwithstanding the consequences of depriving any part of the body of the power of performing its natural functions, parents do not hesitate to swathe and put into the most complete bondage, children of a more advanced age; for what are stays but bandages? However, as all the arguments that have been employed against the use of stays, and the proofs that have been given of their bad effects, will not prevent their being worn, our efforts must be directed towards rendering them as harmless as possible.

"As even fashion does not require that a child should look otherwise than nature made it, there can be no necessity for putting a girl into stays before she is ten or twelve years of age; when stays must be put on, they should be loosely laced, for the tighter they are, the more do they act as compressing bandages, which not only prevent the natural play of the muscles,

and thus weaken them, but even waste and lessen their size. That such may be the effect of pressure is often seen in the wasted leg of the mendicant, which, through tight bandaging alone, can be reduced to that condition which excites our commiseration.

"If stays are put loosely on, and only worn occasionally; and if the girl takes sufficient active exercise, and rests in a proper manner when fatigued, there is little danger of the form suffering even from strong stays. But although, by this method, stays may be rendered almost harmless, there will be some difficulty in pursuing it, as the girl will feel the occasional bondage very uncomfortable. The annoyance produced by it, is marked by the flushing of the face from impeded respiration, and by a stiff and constrained manner of walking. The remedy generally proposed is, that *she should wear the stays until she gets used to them;* this advice will probably be followed; and then it is likely that the bad effects, already described, will ensue."

The common means which have been recommended for curing a stoop, are to confine the head backwards by a steel rod fastened to a cap above, and a bandage around the chest, or to draw it constantly backwards by a weight fastened to a strap passing from the occiput. But as this kind of deformity depends essentially on a comparative weakness of the muscles of the nape, Mr. Shaw very properly objects to all such contrivances as absurd and injurious. Indeed one should prefer the very opposite mode of counteracting the stoop if he were convinced of the importance of applying any mechanical means. "Porters who carry burthens on the back by the assistance of a band round the forehead, always stoop; while those who carry baskets before them suspended by a band round the back of the neck, are peculiarly erect."

The following is a very interesting case in illustration of this subject.

"The very worst consequences may ensue from any system

of treatment where a constant resistance to the muscles of the fore-part of the neck is kept up.—A gentleman had for many years worn one of the collars invented by Mr. Chesher. By using this machine two very bad effects were produced; the muscles of the back were so weakened as to be rendered incapable of supporting the column, while those on the fore-part of the neck were so disproportionately increased in strength, by the constant resistance opposed to them by the strap passing from the suspending rod under the chin, that whenever the strap was loosened, the chin was forcibly drawn towards the chest. As the muscles of the back part of the neck did not offer any counteracting resistance, the windpipe was now pressed down or almost doubled on itself. As soon as this took place, (and it was almost immediate on the attempt to sit up without the collar,) the patient was seized with such a sense of suffocation as to be obliged to throw himself on his back. As he was able to breathe with ease while he lay on his back, his advisers were led farther into error, and believed that it was the weight of the head which pressed down the windpipe. To counteract this pressure various contrivances had been proposed to support the head. Indeed the patient himself was so convinced, from what he had heard, that it was the weight of the head which pressed down the windpipe, and so alarmed had he become from the certainty of having a fit of suffocation when the head was left unsupported, that I had much difficulty in persuading him to believe that if the head could be made heavier, the sense of suffocation would be relieved. I at length induced him, although he submitted with great dread of the consequence, to allow me to place about fourteen pounds of shot on the top of his head. He was very much alarmed, but it was highly gratifying to witness his surprise and pleasure in finding, that instead of his head being weighed down, he could support it, and could breathe with ease while in the upright posture. The principle on which I proceeded was this:—The muscles of the back part of the neck had been brought into such a state, that their ordinary stimulus was not sufficient to excite them to the action necessary to counteract the efforts of those on the fore-part of the neck, which had been evidently increased in strength. The placing a weight on

a certain spot on the head formed an additional stimulus to the muscles of the back part of the neck, a fact which the reader may prove by an experiment on himself.

"By proceeding on this principle, by combining a variety of exercises, and by gradually diminishing the weight carried on the head, I had very soon the pleasure of seeing my patient walking and sitting in a state of great comfort, without being obliged to use any artificial support.

"I have since used nearly the same means, and with considerable success, in the case of a patient who was suffering from a paralytic affection of some of the muscles of the back part of the neck. I wish I had thought of it while attending a lady who had a very peculiar nervous affection, which gave her the feeling of being about to shake her head off."

In the case of young children, Mr. Shaw recommends the practice of making them sit with their play-things on the floor before them. By constantly exercising the muscles of the nape, the habit of stooping will thus be effectually counteracted.

In confirmation of this idea, he instances the erect and strutting gait of tailors, who are in the habit of calling the posterior muscles of the spine into constant action while sitting in a bent posture on their shop-boards. The appearance of shoe-makers is also, according to him, characteristic of the same circumstance.

"The tailor's figure is very erect, but the right shoulder is generally a little higher or larger than the left; from the constant exercise given to the right arm, while the left rests upon the knee: this inequality of the shoulders is not observed in the shoemaker, because he not only uses both arms equally, but the muscles by which the scapulæ are supported, become so strong by the habit of jerking back his elbows while he works, that his shoulders always appear more braced back than those of any other class of persons: indeed so characteristic are the figures of tailors and shoemakers, that they may be easily distinguished in a crowd.

"I have mentioned these circumstances, because they afford familiar examples of the principles on which we ought to proceed, in endeavouring to correct deformities."

The following observations are very interesting, and of great practical utility.

"The spine and the ribs are occasionally bent so as to have some resemblance to the back of a spoon. In such cases, the shoulders not only appear round, but the lower angles of the scapulæ project in an extraordinary manner, because the upper and anterior angle is not only unsupported by the ribs, but is dragged forwards by the clavicles which are carried in the same direction with the sternum. When this is to a considerable extent, it constitutes the *contracted chest* or the *chicken breast.* This, in a slight degree, is common in London, and especially among young lads; it may be discovered by the coat having the appearance of being more worn opposite the lower angle of the scapula than at any other part. Such a condition of the chest can only be completely remedied by appropriate exercises; but a collar is here necessary for a time, to keep the bones in the improved condition into which they are brought by the exercises.

"These arguments will probably appear sufficiently well founded to prove that a girl, under ordinary circumstances, cannot hold her head or shoulders back, unless the muscles by which they are naturally supported are in a proper condition; various contrivances have been proposed to strengthen these muscles. Dumb bells, if managed in a particular manner, are good; skipping, when the arms are thrown backwards and over the head are still better, the exercises, called Spanish exercises, performed with two long poles, are also useful, but to each of these there may be objections, as they all operate more or less on the spine or ribs, which, in cases of a bad stoop, are generally affected.

"The following anecdote, for which I am indebted to a very eminent surgeon, will set the question of the propriety of wearing the back collar in a correct point of view. He was consult-

ed by a gentleman, who is now one of our first tragedians, as to the best mode of correcting a stoop which he had acquired. My friend told him that neither stays nor straps would do him any essential good, and that the only method of succeeding was to recollect to keep his shoulders braced back by a voluntary effort. But the tragedian replied, that this he could not do, as his mind was otherwise occupied. The surgeon then told him that he could give him no further assistance. Shortly after this conversation, the actor ordered his tailor to make a coat of the finest kerseymere, so as to fit him very tightly, when his shoulders were thrown back. Whenever his shoulders fell forward he was reminded by a pinch under the arms, that his coat cost him six guineas, and that it was made of very fragile materials; being thus forced, for the sake of his fine coat, to keep his shoulders back, he soon cured himself of the stoop. My friend was much obliged to him for the hint, and afterwards, when consulted whether young ladies should wear shoulder straps, permitted them, on condition that they were made of fine muslin, or valuable silk, for tearing which, there should be a forfeit."

In his chapter on the effects of exercises on the form, &c. our author is very full and explicit. He protests against the custom, now so much encouraged in the boarding schools of England, of fatiguing young girls and boys by athletic games, and extraordinary feats of activity. In scrofulous and rickety constitutions, great harm is often produced by such over exertions of strength; and even healthy children are sometimes rendered extremely clumsy and inelegant in their forms, by the same circumstances. To maintain the natural figure, or, what is still more important, to improve it when it is defective, we must direct a moderate and varied exercise, frequently alternated with intervals of rest and relaxation.

At the end of the volume is an interesting chapter on the treatment of contracted joints, in which the advantages of rubbing with the hand, a practice heretofore too much confined to empirics, is strongly insisted on. As for ourselves,

we have no doubts on this head, inasmuch as we have repeatedly witnessed surprising effects from this kind of management. An empiric in Yorkshire, is said to have attained great celebrity, on account of the numerous cures which he has effected by the same means. He employs a number of women to exercise themselves almost incessantly in rubbing the contracted limbs and stiffened joints of his patients; and some astonishing instances of recovery from the effects of gunshot wounds of the extremities on the persons of British officers, have been detailed to us by eye witnesses. It is not by rubbing alone, however, that such beneficial effects have been produced. Thumbing, shampooing, pinching, percussion, and kneading are all employed with great effect, by the same class of empirics. Steaming with the vapour of aromatic herbs, of alkohol, and of simple water, has also been resorted to with advantage; and Mr. Shaw thinks it an important auxiliary in the treatment of such cases. He has contrived an apparatus for the application of steam to patients while sitting upright, in a chair. On examining the figure and description, however, it appears to be nothing different from the apparatus of Dr. Jennings, so long used in this country, except that an Argands lamp is used to boil a small basin of water in the tin tube, instead of the cup of burning alkohol.

The following extract will serve to explain Mr. Shaw's views in relation to this plan of treatment.

"The cases where this practice is most likely to be attended with benefit, are those of stiff and contracted joints, after rheumatism, or any chronic inflammation. But to do good even in such cases, great perseverance is necessary; and a degree of boldness, which *a priori* we should almost consider dangerous. The professed rubber proceeds in a much more violent manner than those who know the structure of the parts would venture upon, without some previous evidence of the practice being harmless, although, indeed, this violence may be one cause of the rubber's success. But such bold practitioners may occasionally do harm, as they are seldom capable of distinguishing

between the contractions attending the acute inflammations of joints and those which are the consequences of chronic affections, and are also inattentive to the distinctions of constitution, and the possibility of rousing a scrofulous action. However, instances of bad effects from their mode of practice seem to be rarer than we might expect; but we may not hear of all that occur, for although every instance where a quack is successful is blazoned about, parents are so far ashamed of entrusting their children to the care of ignorant persons, that they always endeavour to conceal any mischief that has been done.

"When a surgeon, for the first time, witnesses the operations of a professed rubber, he is a little startled at the violence of his operations, and is surprised at the manner delicate patients bear them. Such were my own impressions at first; but having, about eight years ago, had frequent opportunities of seeing a famous rubber at work, and having witnessed the result of his treatment in several cases, I was so satisfied that, if judiciously combined with other modes, it might not only be safe, but of the greatest use, that I have since been in the habit of ordering the women whom I employ on these occasions, to rub and shampoo with a degree of violence which, to some practitioners, might appear almost unwarrantable.

"It is scarcely necessary to state, that the nature of the case must be carefully investigated before any mode of treatment is determined upon, and that from whatever cause the motion of a joint may have been lost, we should be very cautious in our first attempts to restore it. If the bones be anchylosed, our labour will be in vain, and the attempt to move the joint may be dangerous; but if the bones can be moved in the slightest degree, we may calculate on doing good, for the stiffness may proceed only from inflammation changing the natural secretions of the sheaths of the tendons, or from adhesions having taken place between those parts. By rubbing, and gentle attempts at motion, the cellular membrane, by which the tendons and sheaths are united, may be loosened and extended, the contracted ligaments may be lengthened, and the muscles resume their natural structure and functions. Liniments and oils of different kinds

are generally employed by rubbers with the intention of *suppling the joints.* The use of them is certainly attended with advantage, for a great deal of *friction* is necessary to cause their absorption, on which the rubber supposes the *charm* of the treatment depends. They are also useful in removing any remaining inflammatory state of the joint, or in preventing its return.

"But although rubbing, shampooing, and a variety of exercises are most useful, and occasionally successful, they should be considered as only part of the plan of treatment; for the position in which a contracted joint is kept, is as important to its cure as the occasional relaxation and exercise. But so much harm has been done by instruments, that parents, and even many practitioners, seem to have a complete dread of them. They are, however, often absolutely necessary; for it will be found as difficult to remedy a contracted and distorted limb, without the assistance of some means to support and preserve it in a certain position, as it is to cure a distortion of the spine merely by exercise. In every case of contraction, the cure will be at least much expedited by any means, however simple, by which the limb may be preserved (during the time it is not exercised) in the improved condition into which it has been brought by the shampooing, &c. Two essential points are gained by keeping the limb in a right position. The alteration in the form of the heads of the bones which is always, to a certain degree, the consequence of the contracted state of the joints, will not be so likely to increase, for the bones are no longer allowed to remain in the position which produced the change; and the muscles and ligaments that have been contracted will actually grow longer if kept extended. This fact is very important in practice, and has been already alluded to at p. 12." M.

ART. IV.—*Researches into the Nature and Treatment of Dropsy in the Brain, Chest, Abdomen, Ovarium, and Skin; in which a more correct and consistent Pathology of these Diseases is attempted to be established, and a new and more successful method of treating them, recommended and explained.* By JOSEPH AYRE, M. D. Member of the College of Physicians, &c. London, 1825. 8vo. pp. 242.

As Americans, we feel no inconsiderable degree of pride, as well as pleasure, in perceiving doctrines and modes of practice brought forward in England as new, which were taught and well understood in this country more than a quarter of a century ago. The *American* physician will find in this book very little more than what he has long known as sound doctrine; and the *English* physician who will read the works of Dr. Rush, will find in them the original source of this doctrine, and learn the injustice of the contumelious interrogatory, "*What does the world yet owe to American physicians or surgeons?*"

In the preface, the author observes, that it has been a common error to regard "the serous accumulation as the disease itself; and the means employed for its removal as the sufficient remedy for its cause." "To correct *these* and other erroneous notions," says he, "concerning the nature and mode of treating this disease, and to fix its pathology on something like a solid basis, are the objects of the following pages." In the prosecution of this task he continues, "I have no acknowledgments to make to any individual writer as my guide and authority." In the commencement of the first chapter, he observes: "The watery effusion, of which dropsy is considered to consist, *is only one in a series of effects of a disease.* The true disease is to be sought for in that particular condition of the solids by which the effusion is produced."

We have no doubt, whatever, of the soundness of this observation; but it is one, the truth of which has been familiar to us for more than twenty years, and which we learned

during our pupilage, from the eloquent lectures of the late Dr. Rush, and which our author might have learned from his *works*, if it had occurred to him to read "*American books;*" so uncommon, according to the Edinburg Review, on the other side of the Atlantic. That we may not be supposed to deal in assertions without proof, we will, as we proceed, cite such passages from the writings of Dr. Rush, as will bear us out in the foregoing observations. "Having for many years," says Dr. Rush, "been unsuccessful in all cases, except two, of internal dropsy of the brain, which came under my care, I began to entertain doubts of the common theory of this disease, and to suspect *that effusion of water should be considered only as the effect of a primary disease in the brain.*"*

Indeed, although Dr. Ayre declares that "he has no acknowledgments to make to any individual as his guide," we are much inclined to believe, not only from the striking coincidence of his "new" doctrine with the sentiments of Dr. Rush on this subject, but also from the equally striking coincidence of some of the passages in the book with similar ones in the writings of Rush, that he had in reality slyly looked into this "American book," and drawn from it some of its valuable treasures. Witness the following paragraphs, for instance: "The illustrious Sydenham," says Dr. Ayre, "believed from his success in a single case that a drastic purgative was a specific for the cure of abdominal dropsy; and acknowledged with the candour which distinguished him, the surprise and disappointment he afterwards felt by its failure in other cases. Since his time, numerous medicines of various powers, and in pursuance of various objects, have in their turn been adopted and discarded; and such has been the confliction of opinions in regard to the efficacy of most of them, as to create in the minds of many practitioners an utter distrust of them all. The cause, however, of their failure

* Medical Inquiries, vol. ii. p. 213, 3d Edition.

has arisen, not from any intrinsic defect in the medicines themselves, but from the defective pathology which governed their use, and in the neglect of those other aids which were required to give them effect." Compare this with the following passage from Dr. Rush's chapter on dropsies, and our suspicion will not appear to be unreasonable.

"We are taught," says Dr. Rush, "by the facts which have been mentioned, the reason why physicians have differed so much in their accounts of the same remedies; and why the same remedies have operated so differently in the hands of the same physician. It is because they have been given without reference to the different states of the system which have been described. Dr. Sydenham says, that he cured the first dropsical patient he was called to by frequent purges. He began to exult in the discovery, as he thought, of a certain cure for dropsies, but his triumph was of short duration. The same remedy failed in the next case in which he prescribed it. The reason probably was that the dropsy in the first case was of a tonic (inflammatory) but in the second of an atonic nature. All the different remedies for dropsy have been proper in their nature, and only improper in the state of the system in which they have been given." There are other passages in Dr. Ayre's book, which furnish no very doubtful evidence, that, "in the four quarters of the globe," there *are* individuals "who read an American book," and who, perhaps, fearful of the Edinburg critics, are prudent enough not to acknowledge it.*

But we will not quarrel with our author for having, perhaps, taken a sly look into an "American book;"—for whether the light which he sheds on his subject be original with

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* "*In the four quarters of the globe, who reads an American book?* or goes to an American play? or looks at an American picture or statue? What does the world yet owe American physicians or surgeons?" Edin. Rev. No. lxv.

him, or borrowed, it is not the less calculated to do good; because, we freely confess, that it is the light of sound doctrine, and which we should be glad to see as extensively diffused in Europe as it has for many years been in this country.

Dr. A. has divided his book into four chapters. In the first chapter he treats of the pathology of dropsy; in the second he describes the several forms of this disease; the third is devoted to their treatment; and the fourth embraces descriptions of cases and dissections.

Chapter I. *On the pathology of Dropsy.*—Dropsy, or the effusion of serous fluid into the cavities and cellular membrane of the body, is not, properly speaking, a disease, but merely an effect of disease. "The true disease is to be sought for in that particular condition of the solids by which the effusion is produced." This morbid condition of the solids, upon which the dropsical effusion depends, consists "in a morbid action in the cellular or serous tissues, and is allied in its nature to inflammation."

"In support of this view of the subject," says the author, "it may be remarked, in the first place, that all the phenomena belonging to cases of watery effusion, met with under one or other of the forms of inflammation, are common to those of dropsy. The fluid discharged under the cuticle from an inflammation of the erysipelatous kind, or from that induced by heat, or by the irritation of a blister, is distinctly a secretion, and resembles in all respects the fluid that is found in abdominal or other dropsies. The fluid collected in pemphigus, which, it is well known, is a disease commencing with detached inflammatory spots, and terminating, after some hours, in watery vesicles, resembles in like manner the dropsical effusion. In some cases of acknowledged inflammation, the fluid effused is found to vary greatly in its degrees of tenuity, so as to be sometimes of quite a viscid nature. The same is observed of the water of dropsy, so that it runs with difficulty through the canula, in the operation of tapping; and instances even have been met with, where the fluid

had consolidated into a mass of jelly, and which could only be extracted in detached portions,* from a considerable opening made for that purpose in the abdomen. And this variable condition of the dropsical fluid may be met with in the same patient, on one occasion of drawing it off, and not on a succeeding one. A similar variation in the degrees of tenuity is likewise observed in the fluid discharged into the cellular tissue, constituting anasarca; so that the œdematous parts, when punctured, either discharge no fluid, or do it very imperfectly."

"But it may be farther shown, that the morbid action, which produces the watery effusion, is only another condition of inflammation, since it obeys the same laws. Thus, it is a well known property of common inflammation to be suddenly translated from one part of the system to another, and which is termed a metastasis. This property is also observable in the action producing the serous effusion; and although it has been supposed to be only the fluid which is thus suddenly removed from one part of the body to another, it is unquestionable that, in these cases at least, the metastasis is exclusively of the action which produces the serous discharge. The action, likewise, occasioning the effusion, as seen in anasarca, usually commences at a given point, and is gradually extended thence in a continuous course, analogous to what occurs in inflammation, and particularly in the erysipelatous kind, to which it bears a very strong resemblance, and into which, indeed, it is easily convertible.

"But farther; the results of common inflammation, it is well known, vary according to the intensity of the cause. The lowest degree of it occasions an increase in the quantity of the proper fluids of the part. In the mucous membranes, the product is a mucous fluid, too well known to require to be described. In the serous and cellular tissues it is a transparent, and, usually, a limpid fluid, consisting principally of serum, and more or less charged with albumen, according to the amount of this lowest degree of inflammation. A higher degree of inflammation yields for its product coagulable lymph; a still higher one produces pus.

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* "See Dictionnaire des Sciences Médicales, Art. Hydropsie."

All these several products of common inflammation are more or less remedial of their cause; or, in other words, they are the immediate means of the cessation or abatement of the inflammation which produced them. This is observed in the lessening or removal of the pain of a blister, immediately upon the completion of the vesication. Similar remedial effects take place upon the occurrence of suppuration in a common phlegmon. Now, the same power of proving remedial to the inflammation, which is observed to belong to the effusion of a blister, is likewise a property, though in a much less degree, of the hydropic effusion, when the inflammation which produces it is idiopathic; or, in other words, is not created by a visceral or other disease, or some particular excitement of the general system. Hence the familiar fact of the cessation of pain in the extremities, on their becoming anasarcous; and of an effusion, which has begun to take place into a cavity, becoming sometimes temporarily suspended, and particularly so in ovarian dropsy, and in hydrocele; and of the effused fluid continuing for several months, and even years, in its sac, without any sensible addition being made to the quantity, until, by some accidental cause being superadded to the original one, the serous inflammation is again renewed."

"By the hydropic or serous inflammation obeying the same laws which govern the other degrees of common inflammation, it follows, that upon a higher excitement being superinduced upon it, the serous effusion should cease. This, therefore, is found to happen in every case where such higher excitement is brought on. This increased inflammation is sometimes occasioned by design or accident, and, at other times, it occurs in the natural and progressive course of some disease formed within the cavity, which is the seat of the dropsical effusion; and where the morbid action, by extending to the peritoneal covering, had first given rise to the hydropic excitement. Of the effect of such higher inflammation, we have a familiar instance in the radical mode of cure employed in the treatment of hydrocele. In these, in the first instance, there is that degree of local excitement which terminates in the watery effusion. When, as we have just observed, the primary excitement is inconsiderable, or soon allayed, the effusion is in small quantity,

and is remedial of its cause; since it will continue in its sac for many years without any sensible increase. By tapping, a slight excitement, similar to that which primarily produced the effusion, is renewed, which leads to an earlier and more abundant discharge than what had previously occurred. To cure it, therefore, a higher inflammation than the mere tapping can produce, is purposely brought on by the injection into the sac of a stimulating liquid, by which, instead of the discharge of the former fluid, there is one of coagulable lymph; and a union of the sides of the cavity being thereby induced, a cure of the dropsy is effected."

Precisely the same doctrine is expressed by Dr. Rush, in relation to the pathology of hydrocephalus. In speaking of this disease he says, "From the facts which have been enumerated, and from the dissections to be mentioned hereafter, it appears that the disease, in its first stage, is the effect of causes which produce a less degree of that morbid action in the brain which constitutes phrenitis. It partakes of the nature of the chronic inflammation of Dr. Cullen, and of the asthenic inflammation of Dr. Brown. I have taken the liberty to call it *phrenicula*, from its being a diminutive species or state of phrenitis. No more occurs in this disease, than takes place when hydrothorax follows an inflammation of the lungs, or when serous effusions follow an inflammation of the joints."* Those dropsies "in which the whole system is affected by what is called a hydropic diathesis, depend, according to Dr. Rush, on a certain morbid excitement of the arteries," allied to the morbid excitement which take place in common inflammatory fevers.

From the facts which have been recorded by Drs. Blackall and Wells, and from our author's own observations, concerning the condition of the urine of dropsical patients, which almost always contain more or less of serum, it appears, says the author, that "when dropsy is under a sub-acute form, and

* Loc. citat. vol. ii. p. 226.

of the anasarcous kind, it is usually idiopathic, and often originating in cold; and in this state, as well as in the sympathetic form, though in a less degree, the urine is found to contain a portion of serum. It is nearly peculiar to this disease, and denotes, according to the quantity of it contained in the urine, the amount of that excitement in the cellular tissue, and of the general vascular system which may be termed serous inflammation: for it is met with most considerably in those forms of the disease in which these particular states of the body are most apparent."

"The urine, therefore, with some occasional exceptions, is loaded with serum in the greatest abundance in those cases where the effusion into the skin precedes the local dropsy, and which denotes the operation of a general cause; whilst, on the other hand, it is, although commonly present, yet in smaller quantity where the anasarca succeeds the other form; since this order in their appearance indicates the existence of a local disease, as a cause both of the local and general affection. It is, therefore, in the sub-acute, and idiopathic forms of dropsy, that this state of the urine prevails the most; and it is in this state, with some occasional deviations, that the defective action is most conspicuous of the excretory functions of the kidneys, but especially of the bowels and skin, as shown by the scantiness of the urine; and particularly by the costiveness and the unperspirable state of the surface."

To elucidate his views in relation to this point, namely, the secretion of serous urine, our author enumerates the four following conditions of the system, as regulating this occurrence:

1st. The serum is most abundant in the urine, when with "a copious and continued effusion, there is a nearly corresponding rapidity in the absorption of the serous fluid. This occurs most commonly when the general excitement precedes, and is a cause of the local, and *vice versa*.

2d. It is absent, or exists only in a small proportion, in cases where the local increased action is only partially ex-

tended to the system generally, and when the local dropsical effusion is but slowly absorbed, as happens in the encysted kinds; or

3d. Where the dropsical effusion puts a stop to the inflammation which produced it.

We pass over the remaining portion of this chapter, and conclude our account of its contents with the following recapitulation of the author's pathological doctrines, and the facts by which they are supported.

"*Recapitulation.*—1. The term dropsy, though employed by nosologists to designate a disease, whose essence is considered to consist in a serous effusion, must be understood as denoting only one of a series of effects, and not always the last of that series, arising from a morbid condition of the serous and cellular tissues of the body.

"2. The serous accumulations from these tissues do not occur, as is commonly but erroneously supposed, from any want of tone in the absorbents; or from a similar state of the exhalants; or from a mechanical obstruction to the blood's return by the veins. For, in respect to the first of these assigned states, it can be shown, that, pending its assumed existence, an absorption readily takes place of the adipose matter or fat of the body —of ecchymoses or livid spots under the skin,—and of mercury and other absorbable matters rubbed upon its surface, or taken internally;—and there is no accumlation of the sinovial or other fluids in their cavities, consentaneously with the serous accumulation.

"3. The opinion of the effusion depending upon a debility of the exhalants, involves in it the difficulty of supposing, either, that there may be *mechanically separated* from the blood a fluid, which, at another time is *secreted* from it; or, that an increase in the quantity of a secretion may continue an indefinite period, under a permanent debility of the secreting vessels.

"4. The theory of a mechanical obstruction being a cause of local dropsies, is disproved by the facts, that every assignable degree and kind of visceral disease is met with without any local dropsy; and local dropsy without any discoverable visceral dis-

ease;—by the varying degrees of rapidity with which, during given periods, the course of an accumulation proceeds;—by the varying degrees of tenuity of the serous discharge in successive effusions into the same cavity;—by the nearly uniform tendency of tapping to occasion an earlier renewal of the serous accumulation;---and, lastly, by a direct evidence being afforded, that mechanical obstructions to the circulation, of the most direct kind, and very greatly exceeding those assumed to exist as causes of local dropsy, may occur, both temporarily and permanently, without producing the slightest appearances of a serous discharge.

"5. That the effusion, therefore, arises from some *particular action in the serous tissue*, and that this action is analogous to inflammation, is assumed, from several of the foregoing facts;---from the identity of the fluid of dropsy with that under some of the recognised forms of inflammation, even to the varying degrees of their tenuity; and from the action proper to dropsy obeying the same laws which govern inflammation generally. Since,

"6. The action producing anasarca is propagated gradually by a continuous course along the serous tissue, as happens in common inflammation;---is subject to metastasis; and is convertible into the higher forms of increased excitement. For the cellular membrane, in common with the other tissues of the body, is subject to various forms or gradations of inflammation. The highest is that in which pus is secreted; the second occasions a discharge of coagulable lymph; the lowest produces, as its result, an increase in the natural secretions of the part; and which, when produced in excess by natural causes, constitutes dropsy. Of these, therefore, the highest form, when supervening upon it, is destructive of the action producing the lymph, and this of the action producing the serum; and the effusion, whether of pus, or lymph, or serum, may be alike remedial of the excitement producing it, where that is not continued by a permanent cause.

"7. The serous inflammation producing a local dropsy, beside the causes hereafter to be noticed, may arise from some disease existing in the serous membranes of a cavity; or it may be secondary to a chronic inflammation in some viscus, and which,

by a slow and progressive action, is propagated to the serous membrane investing it; whence, as from a point, it gradually spreads along the membranous duplicature of the cavity. When once established, it may be continued as a chronic affection, independently of its primary cause; whilst, on the other hand, it will be aggravated by all those causes which increase the visceral disease; and even to the extent of having a higher inflammation superinduced upon it, by which coagulable lymph may be poured out, and a farther effusion of water be prevented.

"8. Beside the proofs deducible from the particular phenomena of local dropsy, farther evidence of its depending on an inflammatory action, is derived from being sometimes connected with, and at other times arising from, a similar excited state of the general system, as denoted by the presence of serum in the urine, and sometimes by the state of the pulse, and of the blood; and which excitement may be either idiopathic, when it is usually most considerable, or symptomatic from a local disease. The absence of the serum from the urine, in the milder forms of the disease, may depend upon the insufficiency of the remote cause to act upon the general system; or upon the insufficiency of the local disease to induce the morbid action there; or it may depend upon the effusion into the serous tissue having removed the excitement which occasioned it.

"9. And, lastly, there is a constitutional effect arising from a permanent hydropic effusion, which agrees in its nature with that which proceeds from a long continued purulent discharge; they both being akin to the effects which proceed from an habitual hemorrhage, or from such other cause, as either withdraws or withholds from the blood one or more of its nutrient parts. The gangrene, therefore, which supervenes upon an œdematous limb, under the cachexy induced by any of these causes, is only what is common to the other forms of inflammation, under that condition of the system; and whether the hydropic state, or any other modified form of inflammatory action, precedes, or follows, as the cause or consequence of the cachetical state of the body, the gangrene, which ensues, is alike derived from the constitution."

*Hydrocephalus.*—This disease is usually divided into three stages; the first being characterized by symptoms of general and cerebral excitement; the second by symptoms of compression or organic leison of the brain; and the third "by some of these with other ulterior symptoms which follow the vascular reaction. Our author thinks it questionable whether this division be pathologically correct:

"For strictly speaking," he observes, "the true disease is comprised between the incipient beginnings of the inflammation, and its termination by the effusion; since the symptoms which follow and compose what are called the second and third stages, are little more than the consequences of the disease, and arise from mechanical pressure of the water upon the brain. The progress, therefore, of what may be strictly considered the disease, should perhaps be considered as terminating with the occurrence of the effusion, which is often remedial of the excitement causing it: and the whole disorder to be thus made up of two distinct states, the first consisting of symptoms, which commencing with the excitement, terminate with the serous discharge; whilst the second is composed of those of a secondary kind, and which are wholly dependant for their origin and continuance on a mechanical pressure from the effused fluid."

The symptoms which denote the approach of hydrocephalus are such as indicate an excited state of the brain. The most prominent of these symptoms are: a dull and sullen expression of the countenance; peevish and irasible temper; alternate flushings and paleness; giddiness; dimness of sight; nausea, and a constrictive pain about some part of the head, most usually the forehead, increased by a strong light or noise, and by any sudden movement of the body; watchfulness, or somnolency; costiveness, or a variable state of the bowels and appetite.

Hydrocephalus appears sometimes as an idiopathic, and at others as a symptomatic affection. Among the most common causes of idiopathic dropsy in the brain, are: various injuries

inflicted on the head by slight blows; "which, in constitutions naturally predisposed to the disease, will often be sufficient to produce that particular increased action in the serous membrane, which occasions an effusion of water." The same results may arise from the action of any of the general causes of inflammation.

When the disease is symptomatic it may depend on particular causes seated within the head, or on some remote and local affection. Its occurrence from causes seated within the head is exceedingly uncommon. The causes of this kind are, "tumours, or a thickened state of the arachnoid, or, of the other membranous coverings of the brain from former inflammations."

"Sometimes adult patients wholly recover from the chronic or sub-acute inflammation, which induced the structural disease, and then this last becomes, at some future period, the occasional cause of the hydropic one. In a case of this kind which I saw lately, the gentleman, a dissenting minister, about thirty years of age, had been attacked a twelvemonth before with a sub-acute inflammation of the membranes of the brain, from which he recovered, so as to resume his clerical duties, and was considered by his friends to be in good health, with the exception of a headach, and some numbness in his arm, of which he occasionally spoke. On a Saturday he complained of his head, and of being otherwise unwell: on the following morning, whilst in bed, he was seized with an epileptic convulsion: through that day and to the end of the third one, when he expired, he was seldom free from them; and before his death he was wholly blind and paralysed. On opening the head, the arachnoid membrane was thickened, and its transparency in several places destroyed; and there were several diaphanous adhesions between it and the dura mater, which were the consequences of the former inflammation. Four ounces of water were collected in the ventricles; but no other vestige of recent inflammation was discoverable in them, and the texture of the brain was natural."

The most common cause of sympathetic dropsy in the

brain, however, is a deranged state of the digestive organs, and more especially of intestinal irritation. The majority of cases which occur in practice depend on causes of this kind. The irritation of worms, and other acrid substances in the bowels has a powerful tendency to determine the circulation to the encephalon, and to give rise to that morbid action in the blood-vessels which terminates in effusion. The powerful influence which intestinal irritation has on the brain, is strongly manifested by the ultimate symptoms under which many children die from *cholera*. In the majority of deaths from this disease, the brain towards the conclusion becomes oppressed so that the patient seems to be in the last stage of hydrocephalus.

"The cerebral disorder, to which a derangement in the digestive functions thus gives rise, is only one of those numerous effects which arise out of sympathies subsisting between these organs and different parts of the system. In many cases the same sympathetic irritation is successively and variously directed to different parts of the system. It will thus leave one organ or part, and suddenly move to another; and through the operation of causes which are not always obvious, but which have a relation to some particular predisposition inherent or acquired. In this way, an irritation may occasion an eruption upon the skin, and thence be translated to the bronchial lining, producing a cough; and next, perhaps, to the serous tissue of the brain, exciting there a turgescent or congestive state of the cerebral vessels, by which symptoms are produced, through the pressure of the congestive vessels, that simulate those of hydrocephalus; or the true disease is brought on by an arterial re-action ensuing upon the congestion, which is resolved by a serous effusion.

"And here let me remark, that the symptoms, which arise out of the disturbance in the digestive organs, just noticed, are naturally divisible into two classes. One of these belong essentially to the complaint; for the symptoms of it are those which are constantly present in it; whilst the other class is composed of symptoms which are secondary in respect to them, and are only of incidental occurrence. The symptoms of the first class

are principally the following: A morbidly craving desire for food, which, after continuing an indefinite period, is succeeded by a loathing of it, and with a feeling of faintness at the stomach under both these conditions of the appetite; with nightly returns of fever and starting, during sleep; the tongue furred, and dry on waking; a nauseous odour of the breath; listlessness and fretfulness, and a disinclination to take exercise, and a marked unaptness for study; drowsiness; chilliness and coldness of the feet; an aching in the knees; diminution of the flesh and strength; costiveness, or the contrary state; a yeasty-coloured, or highly dark and morbid condition of the stools, which are intermixed with slime; sallowness of the complexion; a harsh and dry state of the skin and hair, with a proneness to perspire under very slight exercise. The symptoms of the second class are made up of these, and of various others, which are more peculiarly sympathetic, and which, under the influence of a scrofulous diathesis, or other disordered habit of the system, may become themselves diseases, and even survive the morbid and distant irritation which produced them.

"From observing the marked connexion thus seen to subsist between this turgescent state of the brain, from chylopoietic disturbance, and its serous inflammation, Dr. Golis has concluded that it essentially pertains to it, and, therefore, whenever it occurs, that it is a part of it; and he has thus considered it as forming the first stage of the disease, and preceding in all cases the excitement; and has accordingly enumerated, with their supposed diagnostic distinctions, all those very various and dissimilar symptoms, so multitudinous in their number, which belong to chylopoietic derangement, as denoting the approach or the presence of the cerebral disease."

Intestinal irritation, says our author, sometimes produces a venous congestion in the brain, which simulates hydrocephalus by manifesting all its pathognomic signs. This form of the disease "is of comparatively easy removal, by means that are exclusively directed to the distant sympathetic cause." The difficulty of distinguishing between simulated and true hydrocephalus is "not merely considerable, but often insur-

mountable," and a true opinion of their nature can frequently be formed only by the result. The simulated disease depends on pressure from turgescence of the cerebral vessels; and wants only "that arterial re-action which should cause the fluid to be effused to constitute the true disease."

"The cerebral turgescence and disturbance, therefore, in whatever degree they may exist, are only, when sympathetically produced, to be considered as morbid causes, whose presence, where the predisposition prevails, may lead to a serous inflammation of the tissues of the brain, but which do not form, in any sense, parts of the disease itself; since, under every degree of them, they are so frequently remediable by means which are alone available for the removal of their distant and sympathetic cause. Nor is the distinction, here pointed out, of little practical importance; for the treatment suited to a turgescent state of the brain of an idiopathic kind, and, therefore, independent of any distant cause, must necessarily differ from that which is strictly symptomatic of chylopoietic disturbance. In the one case, the attention must be exclusively given to the turgescent state of the cerebral vessels, as constituting an integral part of the disease; whilst, in the other, it must be directed principally to the disturbed condition of the digestive organs, and only subordinately to the head; as it is only by correcting the disorder in the digestive functions that the congestive state of the brain, as occurring in this latter case, can be permanently removed."

Section II. *Hydrothorax, or Water in the Chest.*—"The symptoms of this affection," says our author, "pertain only remotely to the true disease." They arise from the pressure of the water upon the organs seated within the chest; and consist of a sense of oppression at the precordia, habitual difficulty of breathing, "increased by all those circumstances which call for full and frequent inspirations;" a cough either dry or attended with a slight mucous expectoration; difficulty in lying down, occasioning when attempting it a sense of suffocation, and an aggravation of the cough; sudden startings from sleep; thirst; scanty urine; œdema of the extremities.

"None of these symptoms, singly, are pathognomonic of the effusion; but they are so when taken collectively, and particularly so when considered in connexion with the previous history. They are, however, only symptoms of the effusion; and as the excitement sometimes terminates with the occurrence of the serous discharge, the existence of the excitement is only in many cases discoverable to have existed by its effects; for there are no signs which clearly point out the presence of that state previous to the appearance of the effusion. Writers on the subject, indeed, have spoken of precursory or premonitory symptoms; but what they describe as such are nothing more than those arising from an inferior degree of the effusion, which has already commenced; and are, of course, only a milder form of those symptoms which have just been enumerated. They are, however, important in a practical point of view; for by recognising them early, we are enabled the earlier to combat with the disease."

Hydrothorax, like hydrocephalus, occurs either as a symptomatic or an idiopathic affection, and may proceed from local or general causes. In either case, however, the nature of the inflammation which produces the effusion is the same.

"There is no pretence for dividing this disease into stages, as is done in hydrocephalus internus: for the symptoms which precede the effusion, are too obscure to be recognized: yet the morbid actions immediately exciting the watery discharge, or, in other words, the proximate cause of both is the same."

As is the case in hydrocephalus, so also in hydrothorax, a serous inflammation exists as the essential pathological condition of the disease. The mode by which this serous inflammation is induced in hydrothorax, is by the *extension* of chronic inflammation existing in some diseased viscus or organ, to the serous membrane lining the cavity of the chest, "and not by the same form of inflammation being set up in them, by a certain sympathy or consent of parts, which, from a loose analogy, has been thought to subsist between similar structures."

Our author next enumerates the particular diseases within the thorax which tend to produce hydrothorax. In many cases, says the author, the danger of the original organic disease is by no means considerable, excepting as the cause of the hydropic effusion; in others, on the contrary, the dropsical effusion is the consequence of a disease essentially of a fatal character. When dropsy in the chest is independent of any organic disease existing there, its remote causes may be either of a general or local kind, "and are the same which produce, when applied in a higher degree, or under different states of the system, the other forms of inflammation."

"When, therefore, inflammation takes place in the chest, it may, according to the degrees of it, produce different results; and these may be either pus or coagulable lymph, or a serous effusion, or a mixture of these. If the inflammation be high, and means be employed late, or in an insufficient degree, for subduing it, a lower or chronic form of the inflammation may be left behind, which may produce a watery effusion; or some structural disease remains as an effect of the higher excitement, and which eventually becomes a cause of it. The occurrence of this result, in either of these modes, is sometimes attributed to a debility, arising from the large depletion of blood-letting, which the severity of the previous inflammation had called for.

"That such opinions, however, are founded in error, may be shown from this, that the effusion, thus imputed to debility, does not occur sometimes, until some weeks or months after the period when the bleeding was employed; and although the debility is confessedly of a general kind, yet the effusion is local, and is precisely in the very cavity where the disease existed, which required the unjustly condemned evacuations. The truth of the matter is, that in such cases either the depletory means have been employed in an inefficient degree, or too late; or sufficient care has not been given during the convalescent state, to avoid the several causes which tend to keep up, or increase the force of the local, or general circulation. A lower grade of inflammation, therefore, is left behind in the chest, by which it may, according to the tissue it is seated in, either become an

immediate cause of effusion, or induce a structural disease in some part, which eventually serves as a point whence the serous inflammation may derive its origin. The imperfect recovery of such patients from their first attack, and which is attributed to the depletion, arises from the disease which is left by it, and to the injudicious means, perhaps, that are employed by the too anxious attendants, with the view of restoring the strength. In such patients there may be often traced a permanent difficulty in the breathing whilst at rest, or an obstruction to the full and free expansion of the chest, upon a trial made for that purpose, which is irreconcilable with the assumed cause of debility; though in other cases, from the obscure nature of the symptoms, or the little inconvenience sustained from the chronic disease, the effusion into the chest will at length occur without any indications of its approach."

Scarlet fever frequently serves as a remote cause of hydrothorax, "and in a mode not fully understood." In many instances it appears as a sort of critical termination of the disease, analogous to those pustular eruptions which appear at the close of other acute diseases. When hydrothorax occurs as a sequel to scarlet fever, some slight œdema about the neck or chest usually precedes, and is almost always attended with considerable vascular excitement. "The urine, in these cases, is often of a brown hue, and loaded with serum; and the course of the disease is sometimes so rapid, as to prove fatal as early as the second day after its appearance." A congestive or plethoric state of the sanguiferous system has a much greater influence in producing this disease than is commonly supposed.

"Thus in many persons, particularly such as indulge in the pleasures of the table, and take but little exercise, there is a tendency to a plethoric fulness of the venous system, with a disposition to local congestions. In some the congestive fulness prevails chiefly in the chest, tending to an arterial reaction. In this state, any slight additional increase in the force of the general circulation, or any cause such as obstructed per-

spiration, &c. disturbing farther the balance between the two systems of vessels, may occasion such a particular excitement in the serous tissues of the chest as to produce the serous effusion."

Section III. *Ascites, or Water in the Abdomen.*—The watery accumulation in ascites is of little importance abstractedly from its cause; "and in this respect it differs from hydrocephalus and hydrothorax, in which the effused fluid, from whatever cause it may arise, constitutes an important feature of the disease." The cause therefore of the effusion, and not the effusion itself, is the object to which the attention of the practitioner must be chiefly directed. It may occur as a symptomatic affection of some visceral disease, generally of the liver, spleen, or mesenteric glands. "To produce, however, a dropsical effusion into the abdomen from this cause, it is necessary that the disease of the viscus should be making progress, for in its indolent state, or in other words, if inflammation be not present in it, it is incapable from its mere bulk, as is commonly but erroneously supposed, of producing this effect." The liver may continue for several years in an exceedingly enlarged state, without giving rise to abdominal dropsy. When, however, some accidental cause acts on the enlarged viscus, and excites inflammation in it, an effusion of water at length takes place. This is particularly the case with the spleen. The effusion into the abdomen does not always take place where the parenchymatous structure of the affected viscus alone is indurated; but where the peritoneal covering participates in the disease, and requires a state of chronic inflammation, dropsical effusion will always follow in greater or less degree.

"The chronic inflammation which gives rise to the dropsical effusion, passes from the inflamed or morbid cellular tissue of the organ to the serous membrane investing it; and from thence, as from a point, it spreads with varying degrees of rapidity through the whole of the peritoneal investure. The morbid

excitement, when once established in the peritoneal membrane, continues essentially connected with its primary cause; and the gradual increase of the disease within the organ, is followed by a correspondent increase in the intensity or extent of the serous inflammation in the peritoneal surface. The rapidity of the accumulation will be governed, therefore, by the intensity or extent of this excitement. Prior to the first tapping, in symptomatic cases of ascites, the accumulation of the water proceeds much more gradually than subsequently; for by the tapping, a cause of farther serous inflammation is generally superadded to the original one. After each successive discharge by tapping, therefore, the water is commonly renewed more quickly, and on one of these occasions, perhaps, a sub-acute or chronic inflammation is induced in some part of the peritoneum, by which a farther disease of that membrane is occasioned; and at length, either by the increase of this superadded disease, or as an effect of some succeeding operation, a still higher degree of inflammation comes on, which may prove destructive of life.

"In some instances, where there is considerable disease of the liver, the water of the first accumulation may be absorbed and carried out of the body, and the patient may thus undergo a cure as it respects the effusion; but the serous inflammation, which caused the discharge, has only, in this case, yielded to an inflammation of a higher grade, which may arise, either from the peritoneal membrane participating in the increase of disease in the affected viscus, or, by there accidentally supervening upon the secondary one a farther cause of inflammation. In these instances, as well as in those in which a higher inflammation succeeds the operation of tapping, coagulable lymph is poured out, by which the peritoneal surfaces, which were formerly the seat of the serous inflammation and effusion, are perhaps agglutinated together; and a fresh and more formidable disease is thus superinduced upon, or superadded to, the former one. In the worst of these cases pus is discharged from some points of the inflamed surface, and which, by mixing with the lymph and serum that are poured out at other parts, forms an apparently homogeneous fluid of a milky colour, which in puerperal and other cases of abdominal inflammation, has been strangely be-

lieved by some to be chylous; and by others, an effusion of the milk by a metastasis."

Idiopathic ascites may proceed from any of the common causes of inflammation. Cold, however, is the most frequent cause. When cold acts generally, the ascites is usually combined with anasarca, and the disease comes on suddenly, and has a rapid progress. In cases of this kind there is fever, with very considerable thirst; the blood when drawn is buffy, and the urine contains a large quantity of serum. Robust and labouring persons are most subject to this form of dropsy. The effusion, when large in quantity, may become a source of further disease "by the mechanical irritation it gives by its pressure to the organs and integuments of the abdomen."

"Of the power which the pressure of the distending fluid has upon the parts surrounding it, we have a familiar instance in the entire absorption of the fat from the parietes of the abdomen, in those labouring under ascites. And that the organs themselves do not escape from an injury inflicted by a compressing fluid, I have repeatedly witnessed. In one case which I saw of hydrothorax in a boy, who laboured under this disease during several months, and where the effusion was confined to the right side of the chest, the pressure of the effusing fluid had been so considerable, and so long kept up, as to cause the entire destruction and absorption of the right lung; so that the whole that was found remaining of it, was a small portion of membrane loosely attached to the upper part of the chest, and floating in the surrounding fluid."

Section IV. *Ovarian Dropsy.*—This is a very short chapter, and not sufficiently interesting to require any particular notice.

Section V. *Anasarca, or Dropsy in the Skin.*—This disease, according to our author, consists in a serous inflammation in the cellular tissue of the body, with a serous effusion as its result. This, like the preceding forms of dropsy, may be either symptomatic or idiopathic, local or general. Idio-

pathic anasarca commonly arises from cold, or from scarlatina. When it arises from cold locally applied, the effused fluid is of a highly viscid or gelatinous character; the disease being commonly local, having a strong resemblance in its sensible appearance to phlegmasia dolens, to which the author is inclined to believe it is closely allied. The serous effusion of one part *appears* sometimes to be translated to another; but this is not a translation of the serous fluid, "but only of the serous inflammation yielding the fluid. This transference of the morbid action, is usually to some other part of the cellular tissue; but sometimes it is to the serous membrane of the brain, or to the cavities of the chest or abdomen." Œdema of the feet frequently occurs as a consequence of a derangement of the chylopoietic functions, particularly in young females with obstructed catamenia. The most common form of anasarca, however, is that which is symptomatic of some visceral disease. It generally begins in the feet, and is not often attended with any evident symptoms of increased vascular excitement in the parts affected. When combined with ascites, "it has been supposed to arise from pressure made by the water on the iliac veins, by which the returning blood is impeded in its course." Our author objects to this mode of explaining the occurrence of the disease. "Frequently," he says, "in pregnancy, the uterine pressure produces considerable swelling of the crural veins, without any serous effusion resulting from it." He does not indeed deny that a mechanical compression of the vein will not in some cases produce effusion into the cellular membrane of a part.

"A pressure made on the brachial vein and its branches by schirrous glands in the axilla, is a common cause of this state. The remote cause is here, indeed, of a mechanical kind, but not so the proximate cause of the effusion. By the resistance given, in this case, to the blood's return by the principal veins of the limb, a re-action is occasioned in the extremities of the arteries leading into the corresponding extreme branches of the veins.

and which re-action is in this, as in a multitude of other occasions, of congestive fulness in these vessels, a sanative effort of nature to overcome the primary obstruction."

Dr. Ayre also objects to the commonly received opinion that local and general debility are a cause of anasarcous swellings of the limbs in chronic diseases. This opinion is predicated on the fact, that anasarcous swellings occur in a limb by keeping it long in a depending position; and that they are relieved by a horizontal one. It has also been supported by arguing, that the occurrence of an inflammatory state of the parts is incompatible with such debility, and that the want of a preternatural degree of heat on the surface contradicts the existence of an inflammatory condition.

"Upon which objections," says Dr. A. "it may be observed, that the supposition of the general debility being the cause of the local one, and this last of a simple mechanical separation of the serous fluid, is invalidated by the fact, that the effects are in no correspondence with the assigned cause; for in a multitude of cases of both chronic and acute disease, the general debility, as well as the local one, as far, at least, as this last can be judged of, is often excessive, as in the last stage of fevers, and yet without being attended by any effusion; whilst, in other cases, the serous discharge is considerable, and the debility only slight. That with respect to a proof being afforded of such debility, by the anasarcous state occurring most considerably when the limb is in a dependant position, it may be observed, that this state of the limb will be produced in the strongest person when unduly subjected to this cause, and where the debility is immeasurably less than that which prevails in typhoid and other debilitated patients, in whom no such effusion is produced; and that, with respect to this and the other objections, it may be farther observed, that there is, it is well known, in certain fatal chronic diseases, a tendency in the lower limbs to take on a low inflammatory action, and often of the erysipelatous kind; and that, therefore, the still lower degree of it, proper to anasarca, may be well imagined to prevail. And if, be it remark-

ed, the depending position of the limb increases the effusion, and the horizontal one relieves it, it is only what is common to all the other forms of increased action, and which proceeds from the higher congestion of the vessels induced by such a position. The temporarily dependant state of the limb, in fact, may aggravate, but does not cause, as the horizontal one will relieve, but can neither prevent nor remove the hydropic inflammation of the part. And with respect to the temperature of the surface of œdematous parts not being preternaturally raised, the objection, if of any force, must apply to all, for all have this peculiarity, and yet some cases of œdema confessedly arise from inflammation; differing not, in this respect, from several other morbid states, as those, for instance, of chronic rheumatism, and which are indisputably, as indicated by the nature of their causes and remedies, of a truly inflammatory kind."

*Treatment.*—There are three general indications to be kept in view in the treatment of hydrocephalus. The first is to remove, with its causes, that turgescent state of the brain which may produce the arterial re-action and effusion; the second to reduce the arterial excitement when formed; and the third to correct or relieve, as far as practicable, the effects of the effusion, and procure if possible its absorption.

The cerebral turgescence, may arise either from some of the emunctories of the body becoming obstructed, and their secretion diminished, or "from a failure of the natural efforts of the system to produce some one of those obscure but critical and sanative actions, which follow upon certain fevers; or finally from some artificial but long established drain by issue, or other source, being suddenly dried up." To remove the turgescence when it arises from the two first of these causes, recourse must be had to diuretics, the milder diaphoretics, and aperients, the occasional use of the warm bath, leeches to the temples, and mild sinapisms to the feet, together with a simple unirritating diet, warm clothing, &c. &c. To remove cephalic congestions when it depends on the third variety of causes, an issue established "in the neighbourhood of the

part where the former discharge was seated," is perhaps the most effectual means we can employ.

"To some of my readers," says Dr. A. "perhaps it may seem like an adoption of the doctrines of the humoral pathologist, to recommend so inconsiderable a remedy as an issue, for so considerable an affection as an incipient turgescence, or impending inflammation of the brain; but whatever may be said, and much may be said upon the question, the fact of its utility in many such cases is indisputable. As an instance illustrative of this fact, among many that have repeatedly fallen under my observation, I may mention here the case of a man whom some years ago I admitted into the hospital for epilepsy, which he had been labouring under during a considerable time. The fits occurred three or four times a-week, and were preceded by that peculiar feeling in his right arm, which is termed *aura epileptica.* By an accidental exposure of that arm at one of my visits, I discovered a scar, and upon inquiry as to its origin, I learnt that it was caused by an extensive sore, which had been discharging during several months, and which had healed up a short time only before he was attacked by the fits. The connexion between his disease and the suspended discharge being apparent, I substituted a seton in the neck for the medicines before in use, and with the result, I need scarcely add, of immediately curing him of his epilepsy."

When the cerebral turgescence arises from some irritation in the abdominal viscera, "the primary disturbance," says Dr. A. "is usually in the liver, as is evidenced by the colour and condition of the stools, and the nature and effects of the remedies, though the irritation which acts sympathetically upon the brain is often seated in the *primæ viæ.*" We do not agree with our author, in the opinion that the primary disturbance in cases of this kind, is usually in the *liver;* we believe that in most instances the irritation commences in the intestinal tube, and that the deranged hepatic function is a consequence of the intestinal irritation. But whatever be the truth in relation to this point, we do not doubt of the cor-

rectness of the treatment recommended by our author in cases of this kind. Besides applying leeches to the temples, "small doses of calomel nightly, and in urgent cases two or three grains, or often in the day, and a laxative enema or an aperient draught the succeeding mornings, together with the assistance of diuretics and the most exact attention to regimen, both as to kind and quantity of the food," constitutes, without doubt, a judicious and efficient plan of treatment. When the cerebral inflammation tending to dropsical effusion is idiopathic, bleeding, both local and general, is indispensible. The abstraction of blood, in such cases, must be promptly and efficiently practised. "The object," says the author, "is to make expeditiously such a forcible impression upon the disease, as to remove the urgent symptoms whilst the bleeding is going forward; and where a patient is of an age to speak of the state of his feelings, the bleeding must be prosecuted to this result." Along with leeches, a blister applied to the shaven scalp, may aid in relieving the internal vascular excitement. Dr. A. observes that mercury should never be given with a view to its specific effect in this complaint, unless the disease is symptomatic of some functional disorder of the liver, and other chylopoietic organs, in which case it is calculated to do much good. The author thinks that the cases that have been reported of the beneficial effects of mercury have been examples of the symptomatic kind, depending on abdominal irritation.

"With children, the symptomatic hydrocephalus is, perhaps, a much more common form of it than the simple inflammatory; but it is not always easy to those who are inexperienced in their treatment, to distinguish between them. The condition of the stools, at the period when a child is labouring under the disease, will afford to such persons but an imperfect notion of its true nature; for the disturbance of the brain will often create a disorder in the secretions, both of the liver and the other chylopoietic organs, producing green looking stools; and there is often a congestive state of the brain for a short time preceding the

full developement of the idiopathic excitement, which may, in like manner, by re-acting upon the liver, create a disorder there. In cases, however, which are symptomatic of this cause, the chylopoietic disturbance will be found to have existed several days or even weeks; and the origin of the disorder, in like manner, may be commonly traced to some irregularity of diet, or other obvious causes, and frequently in infants to those which are connected with premature weaning; and sometimes even the cerebral disorder itself will have been only the last of a series of effects in the system, to which such disturbance had given rise."

In cases of this kind, the author gives a-half or a-third of a grain of calomel every half hour, during several successive hours, followed by a laxative enema, or some mild aperient; after some time the doses of calomel are to be repeated until a decided change is effected in the character of the complaint. He cautions the practitioner not to discontinue the foregoing means upon the occurrence of what appear to be symptoms of effusion, "since frequently these symptoms, as it respects the effusion, will unexpectedly manifest their fictitious character, and disappear under a treatment no wise adapted to such a state, and with a rapidity too, which equally betrays their true character."

Dr. A. observes that from cases of this kind, he was formerly inclined to dissent from the common opinion, that cases in which effusion has taken place are remediable. Instances however have come under his notice which have fully convinced him that recovery *does* sometimes take place, even after the occurrence of effusion.

"The instances," says he, "to which I here refer, are those where the effects of compression only subsided very gradually; or where some one or more of them permanently survived the rest. In one case, there were the most decided symptoms of a permanent compressing cause within the brain, among which were a partial blindness and paralysis, with a fatuous state of the mind, but which, in the course of two years, were entirely

recovered from. In another case of a boy twelve years of age, who recovered, there was, among other symptoms indicating compressed brain, such a degree of spinal cramp as to occasion the cataleptic rigidity of the whole body, and which, on subsiding, left behind it the most entire relaxation and paralytic weakness of all the voluntary muscles, with an irremediable imbecility of mind."

We have ourselves had two examples of this kind in our practice. In one case after all the most prominent symptoms of hydrocephalus, the child gradually recovered its health, but was left perfectly blind and paralitic. The blindness continued for six months without any apparent amendment; after that period, it very slowly regained its sight as well as the power first of its upper and finally of its lower extremities. Perpetual blisters were kept discharging from behind the ears for five or six months, and diuretics with laxatives used almost daily. The child is now well, and apparently of sound intellect. In cases of this kind, the brain probably gradually accommodates itself to the moderate degree of pressure occasioned by the effusion, and regains its usual powers of action, without any actual absorption of the extravasated fluid.

In the incipient stage of hydrothorax, "the plan of treatment to be pursued, must consist in the use of such means as are calculated to subdue the chronic excitement of the serous membrane, and the primary chronic inflammation of the diseased organ." For this purpose the local abstraction of blood from the chest by leeches, to the amount of about six ounces every third day, for three or four successive times, together with blistering upon the affected side, are the most effectual measures we can employ. In plethoric subjects, generally, bleeding also must be practised. "Venesection, however," says the author, "will not be necessary in ordinary cases; for local depletion, combined with blistering, is more particularly adapted to correct that chronic inflammation of the serous membranes, which causes an effusion from them, and which

is neither the result of any inflammatory excitement of the general system, nor of a nature to produce it."

Having, by those means, subdued the internal chronic inflammatory action, a seaton fixed in the chest will generally prove highly beneficial to prevent its recurrence. The same practice is equally proper and useful in subduing chronic periotoneal inflammation, and consequently in the treatment of abdominal dropsy.

"Analogous to what occurs in the thorax, the chronic excitement of the serous membrane investing the organs of the abdomen or lining this cavity, is generally kept up by a corresponding state of the diseased viscus, and therefore local depletion will often reduce the primary disease into an indolent state, and thus put an end to the secondary one depending on it."

Dr. A. is no advocate for the indiscriminate use of mercury in abdominal dropsy.

"With too many practioners," says he, "it is the practice to employ mercury freely in every case of abdominal dropsy, under the vague notion of there existing some mechanical obstruction in the liver or other viscus as a cause of it, and under the equally vague notion that mercury so employed will remove it. The practice, however, to speak of it in the mildest terms, is founded on erroneous views of the pathology of these diseases; and employed, therefore, as it is by some, on all the occasions in which they meet with them, must be frequently very injurious. For, independently of the injury to be inflicted by it, when given freely in some of the forms of liver-disease, there is an effect produced by it on the urine, when given to a person in health, resembling that which arises from the specific excitement of dropsy. Under a salivation, the urine becomes charged with serum. Any condition of the system, therefore, approaching even to the state of salivation, must be injurious, by the tendency it must have to increase that morbid state of the body, which is nearest allied to the hydropic one. Hence, the mercurial salivation has been numbered amongst the remote causes of dropsy;

and the resemblance between the dropsical and mercurial excitement, thus established by the common resemblance of the urine in these states, goes far to prove this connexion; and it is not improbable that the mercurial inflammation, when considerable, may survive its specific cause, and degenerate at length into the purely hydropic state. When, however, mercury is given in minute doses, so that these its specific morbid effects are not produced, it is capable of becoming highly useful, as we shall presently have occasion to notice."

Drastic purges have an important influence in subduing the disease; "not merely by removing the water, but likewise by contributing to reduce the chronic peritoneal excitement on which the effusion depends. Our author prefers *gamboge* as a purgative in ascites. He gives it to the amount of four or five grains at a dose, with the same quantity of some aromatic powder," and triturated with a few crystals of the super-tartrite of potash. In urgent cases of hydrothorax, he gives the gamboge in the dose of three or four grains every four hours, until ten or twelve grains are taken, or very active purging is produced.

When the strength of the patient will admit of it, the purgative may be repeated every four or five days. When dropsy depends on an aggravated disease of the liver or mesentery, however, there is often a very considerable tendency to spontaneous diarrhœa; and in such cases, the purgatives must be of the milder kind, and given with great caution.

The *diuretic* which our author employs, and upon which he is accustomed almost entirely to rely, is the powder of dried squills and digitalis given in combination, in the form of pills.

"The dose of the squill is something less than a grain, and that of the digitalis only a sixth part of a grain, given uninterruptedly every third or fourth hour." The minute dose of a sixth part of a grain of digitalis, says the author,

given every three hours in union with squill, "has all the efficacy, as a diuretic, of the largest doses which have ever been ventured on, of this medicine, and none of their danger." A third, or a-half a grain of calomel given nightly, with infusion of dandelion, or some other popular diuretic teas taken as common drink, in general, very considerably increase the diuretic operation of the squill and digitalis.

In general, diuretics act most beneficially in this disease, when they produce also a slight cathartic effect. "When, therefore, they do not produce the effect on the bowels, and the discharge of urine continues scanty, a proper dose of cremor tartar should be administered every morning," or dissolved in the patient's diuretic drink, and which may be taken in the course of the day.

The foregoing treatment is applicable, principally, to such cases of hydrothorax and ascites as arise from "the serous inflammation of the investing membranes, depending on chronic inflammation of one or more of the viscera. The author in the next place proceeds to speak of the treatment proper for the idiopathic forms of hydropic inflammation, "which may be either strictly local, or consist in a general specific excitement of the system, leading to a general watery effusion; and of which the exhalants of the several serous membranes only partake in common with the rest of the serous tissues." The pulse in this form of dropsy is hard, and general along with topical bleeding, is consequently an important remedy.

"I have met," says the author, "with several cases in which a considerable accumulation of water has taken place in the abdomen, and in the cellular tissue of persons of a plethoric habit, when by a copious bleeding the disease was at once arrested, and the water afterwards absorbed.

"The very successful issue, indeed, of the practice here recommended in cases strictly idiopathic, is among the most agreeable occurrences which the medical practitioner can meet with; for the distressing associations connected with this disease

render its presence a source of considerable disquietude to patients and their friends. An interesting young woman applied to me labouring under abdominal dropsy. It was attributed to cold, and had only existed about three weeks; yet the body had become considerably distended, and the fluctuation very distinct. Her general health was only inconsiderably affected; there was no anasarca; the urine was scanty, and was only slightly coagulable by heat; the pulse was increased somewhat in its force and strength. The abdomen had been gradually enlarging up to the day in which I first saw her, when I directed fifteen leeches to be placed upon her body, and after twelve hours a blister, and to take a brisk cathartic, with some diuretic medicines. On the following day the swelling was found to be stationary, and on the following one it was perceptibly lessened. On the third day eight leeches were again placed upon the body, and a second blister; and the cathartic was repeated. The urine now became copious, and the size of the abdomen decreased. In something more than a fortnight the dropsy was entirely removed, and the patient has since continued well.

"In some patients whom I have attended under this particular form of the disease, and in whom the recovery was equally rapid, there have occurred returns of the effusion, from neglecting to avoid the ordinary causes of irritation, and which were again removed by the same treatment, and the cure completed by a more scrupulous adherence to the rules enjoined. In one patient this renewal of the dropsy occurred thrice in the course of seven months; and it was not until after repeating the use of the leeching and blistering for several times, assisted by the other means, that the entire re-establishment of the health became secured. These attacks of idiopathic dropsy, according to my observation, are more common with females than men, and more with the younger than with those in middle or advanced age. If in the earlier periods of their appearance they are neglected, or mismanaged in their treatment, and any of the ordinary causes of inflammation be applied, there will be a danger, not only of their becoming established, but of a higher form of inflammation being superinduced upon the first one; when a fresh source of irritation of the peritoneal membrane being created, a

structural disease of it may be formed, and a cachetical state of the system at length induced."

On the treatment of ovarian dropsy our author says very little. In relation, however, to the operation of tapping in this form of dropsy, as well as in ascites, Dr. Ayre observes, that in general this operation is resorted to at too early a period of the disease, and often, also, under a condidition of visceral disease, which renders its success impossible.

"In cases of simple ascites, to take the most inconsiderable example of it, where the cause is of an incidental nature, and but little connected with hepatic disease, the operation will be attended with no danger, and may be successful, but can rarely, if ever, be required where the proper treatment has been pursued; and should on no account be resorted to until after the amplest trial of all the various means for the removal of the water and its causes; and not until, through the failure of those means, it has begun, by its pressure upward, to threaten a serious disturbance to the breathing, and the other consequences just noticed: since in cases where tapping is too long delayed, the accumulated water, which is but an effect of a disease, may become itself a cause of one.

"The inconvenience of the operation, if so mild a term be allowable, is, we may repeat, in occasioning a renewal, or an aggravation of the serous inflammation in the peritoneal lining; whilst the danger in all cases is in the nature and amount of the visceral disease producing the dropsy; and not in the dropsy itself; because, even a slight degree of disease, especially of the liver, will sometimes produce ascites, when in a severer form of the same disease there shall be a very inconsiderable quantity, or even no effusion of water, from the accidental circumstance of the peritoneal envelope of the organ being implicated in the disease in the one case, and not in the other. Many cases, therefore, of ascites, even when combined with anasarca, may be inconsiderable in point of danger, when the dropsy, underits simplest form of œdema of the ankles, shall be irremediable;

since it is, in this last case, the sequel of an essentially fatal disease of the liver, or of some other viscus.

"To determine correctly, therefore, regarding the danger of the operation in respect to the inflammation that may ensue upon it, a reference must be had to the nature and extent of the hepatic or other disease, and not merely to the intensity or the extent of the serous inflammation, and its hydropic effusion, both of which are but secondary.

"In illustration of the importance of referring to these distinctions, I may notice the case of a female patient of about thirty-five years of age, whom I admitted some years ago into the Hospital, labouring under an ascites and general anasarca to a degree that I never saw exceeded. The disease was of some months' standing, and all the usual means had failed with the practitioner whose care she had been under, and who had been only deterred from tapping by the fear of its danger, as her disease was suspected to have originated from intemperance. There were, however, no decided symptoms of hepatic disease, nor any signs of effusion into the chest; and the disease, although formidable in its appearances, and in the disturbance it gave to the breathing, was not so in reality; and the water, therefore, as a measure of necessity, was drawn off by tapping. In three weeks the anasarcous water was absorbed, and there was no return of the ascites. She left the Hospital well; and I heard several years after that she had since that time continued altogether free from her disease."

Having now given a full view of the contents of this work, we conclude with the observation, that although Dr. Ayre is not entitled to the credit of much *originality* in the doctrines and modes of practice which he offers, we nevertheless deem it our duty to recommend his work, as one containing many just and rational views in relation to the pathology and treatment of hydropic diseases. E.

ART. V.—*An Essay on Headachs, and on their Cure.* By WALTER VAUGHAN, M. D. of the Royal College of Physicians in London. London, 1825.

THE author no doubt wrote this volume partly with a view to increase among his professional brethren, the knowledge of the nature and treatment of headachs, for which he deserves their thanks; but by his own declaration he also had a view in writing his book to inform persons out of the profession upon the disease of which it treats, for which he deserves the censure of both. For no medical books do less good to the profession, and none more harm to the afflicted, than those which are written with the intention that they shall be "popular." Such works are made up, in the greater part, of truisms, of those facts and opinions which have become common property and of a vast amount of compilation. Persons who have not studied medicine, by reading books of this kind get a smaller idea of particular subjects, and are cheated into the opinion that they know a great deal about medicine. The consequence is, that many a sound man imagines himself diseased, and tampers with himself until he really becomes so; seldom, however, confining his quackery to himself, as many of his friends partake of his "good intentions," and of his bad health. When a physician is called in to the family of readers of this sort, he is treated as if he came to hold professional consultation, not to advise,—his prescriptions are often supplanted by a "recipe," and his directions are sure not to be followed any farther than they may fall in with their notions.

Under the protection of the title of his book, our author is very careless in his arrangement, and very loose in his definitions; and under that of having written in part for those who have not studied medicine, he is repeatedly guilty of amplifications and wearisome digressions.

As to the main question, how much the work has added to our knowledge of the disease upon which it is written, I shall

leave my reader to judge for himself, and for that purpose I shall give him a fair analysis of the book. The author tells in his preface that he has endeavoured

1. "To remove all ambiguity from the term headach, by pointing out what is essential to the disease signified by that term, and what is not essential:

2. "To show that there is a distinction of headachs in the nature of things; and accordingly to make a division of them so perfect as to comprehend them all; that such errors of judgment as have too often arisen from the confounding of mere pains in the head with headachs, and different headachs one with another, may in future be avoided: and

3. "To give an enumeration of the most common occasions on which headachs take place; so as to trace out those principles, resting not on hypotheses, but on facts, upon which, as *data*, all reasoning concerning the nature and cure of any headach should proceed.

He opens his introductory chapter by telling us that all who wish to know what any disease is, will probably expect to find it in the writings of nosologists. And he asks, "Who, if he consider that no part of the human body is so subject to pain as the head; that even the slightest pain in it may increase and be followed by apoplexy, by epilepsy, by insanity, &c.; and that headach, as a symptom, may occur in almost every disease, does not wish to know what headach, as a disease, is?"

But as Cullen the greatest of nosologists has omitted headach, he thinks it is probable that the "reader may search in Sauvages." He therefore devotes this chapter principally to a review of the three first genera of that author's order, dolores capitis, cephalalgia cephalaea, and hemicrania—the other three not relating to headach properly so called. He thinks pains of the face ought not to be referred to the head as is done by Sauvages. To show the necessity of distinguishing between the head and the face, he considers their proportion to each other in the four classes of animals—tells us of the greater

beauty of children owing to their large heads,—of the large heads which the ancients, in their pictures and statues gave to their great men, their heroes, and their gods—explains to us the facial line of Camper, gives us the comparative facial angles from the ourang-outang up to the gods, and introduces Aristotle and Professor Tiedemann to us.

Sauvages calls cephalalgia "a heavy pain in the head," and makes it depend upon an "infarction of the blood-vessels in the cortical portion of the brain;" cephalaea he calls a "tensive pain," &c. in the head, and thinks it differs only in degree from cephalalgia.—If this were so our author thinks that they should both depend upon the same cause, which he takes to be impossible, because "the assertion of Sauvages that the pain in cephalaea is tensive, spastic and vivid," is not supported by Celsus who calls it, when fully formed, "intolerable;" nor by Araeteus, who says that the attack of diseases of the head are tolerable; and because it is not likely "that a slight degree of infarction of the vessels of the cortical portion of the brain causes a sensation of heaviness in the head, and a great degree of it a "tensive, spastic, and vivid pain?"

The opinion of Sauvages that the whole head is affected in cephalaea and only a part of it in cephalalgia, our author thinks is contradicted by the common experience of medical men.

"As Sauvages assigns headach to an infarction of blood-vessels," which our author does not believe, he speaks at great length of those signs which are often considered "as denoting a greater distension of the blood-vessels of the brain, or what is not very properly called a determination of blood to the head."

*Of Flushed Countenance.*—Considering the angles of the carotid and vertebral arteries before they enter the cranium, their anastamosus after they have entered it, and "their minuteness as they pass out of the pia mater into the cortical portion of the brain," it is clear, he thinks, that the shock which is felt in the other parts of the body from the contraction of the heart, "is scarcely sensible at the circle of Willis: and, there-

fore, that the arteries of the brain must have an inherent power of their own, by which they carry on the circulation of the blood;" consequently there may be a flushed countenance without an infarction of the blood-vessels of the brain. "And very credible authors allow that when both the brain and its membranes have been found loaded with blood, in apoplexy, the face had sometimes been pale."

He considers the signs of headach and those of distension of blood-vessels within the cranium, as essentially different from each other—in headach there is quickness of sensation and of perception, the operations of the mind increase the pain; there is watchfulness, and respiration corresponds, as in health, with the pulse.

*Dilated Pupils.*—Our author objects to dilatation of the pupils as a sign of compression of the brain, because "it is also a sign of worms in the intestines; and it follows the rupture of a large vomica in the chest;" because "weak, relaxed and scrofulus habits" have generally dilated pupils; and because it does not always attend amaurosis or apoplexy.

*Increased pulsation of the Carotid Arteries.*—As proofs that this is not a sign of congestion of blood in the brain, he urges the consideration of those cases of headach which are attended with violent pulsation of the carotid arteries, and arise "from excessive and repeated venesection for the cure of acute diseases;" and of those cases of recovery from fainting and concussion of the brain where there is also a violent pulsation of both the carotid and the ulnar arteries. Our author admits there may be a distension of the blood-vessels of the brain "far beyond their healthy state," but not from the impulse given to the blood by the contraction of the heart.

He thinks that flushed countenance, dilated pupils, &c. often attend a diminution of blood there. He cannot see how a merely increased or diminished action of the heart can produce repletion or depletion in any part, and he considers it a law of nature that the brain should be secure against the sudden production of either of these states; he therefore thinks

they depend upon some organic change in the blood-vessels themselves.

Our author says, "but although I cannot conceive how an enlargement of the diameters of the arteries of the whole brain can give rise to any sensation, yet I would not deny that there may be a sensation of pain with a sensation of weight, or with stupor, &c. if the vessels of only one part of the brain contain more blood than usual, and those of other parts less; for a part of the pericranium, or of the dura mater, or of the pleura, being inflamed, a pain is felt in the whole of their extent; and where patients have complained of pain and heaviness in the head, some of the blood-vessels of the brain have been found over distended with blood, and others not at all distended: therefore if we assume a temporary enlargement of the blood-vessels in some spot within the cranium, as the sine qua non of headach, we argue from a fact fairly and fully ascertained."

But he does not suppose that disturbed blood-vessels give rise to pain merely by their pressure, "but rather by occasioning a change in the circulation."

Chap. II. *Definition of headach.*—Our author says he will first tell what he thinks "a headach is, and shall next show what is not a headach."

He "purposed to confine the word headach to every disagreeable sensation, which the patient refers either to the inside, or to the outside of his head, provided that the disagreeable sensation be so increased by the exercise of his intellectual powers, that he is alarmed, reserved and shrinking from the impression of internal objects, his pulse and his respiration being not more frequent than in health, but his temperature, that of his extremities especially, being more or less diminished."

"The only epithet which Celsus gives to headach is," that of "intolerable; and unless the pain be intolerable, he says there is no necessity for the remedies of headach." Our author understands Celsus as meaning by this adjective a pain

which "entirely obstructs our pursuit both of knowledge and happiness."

The pulse at the wrist is unaltered in headach. He "knows a headach is sometimes attended with fever, at least with a more frequent pulse and a white tongue;" but he regards this as not at all essential to the disease. Respiration he has known to be disordered in headach, yet he thinks that it generally corresponds with the pulse.

He attributes the chilness and coldness of the extremities in headach to a disturbance of the vital powers—and not to that of the "balance of circulation." He now proceeds to tell us "what a headach is not."

He thinks it is unphilosophical to give the name of headach to a disease of the integuments of the head which are like the integuments of other parts, and which, when disordered, require the same means of cure. Yet he thinks "it may not be amiss to consider a little by what signs they have been said to be distinguished."

The pain which attends the "erection of hair-like bristles," and which is increased by touching the hair, he considers to be an ambiguous sign, as it may depend not only upon a disease of the integuments, but upon some sympathetic affection of them with other parts. He considers "any redness or tumour on the scalp," as "no better sign than the former."

"A third sign that the pain, as well as the proximate cause of it, is seated in the integuments of the head, is said to be an obscure redness of the skin, together with a suffusion of the eye."

This, he thinks, is not significant that the pain is seated in the integuments of the head, because the dura mater "is continuous with the periosteum, binding it so that when" it "is inflamed the eye is red and irritable."

"Besides, the origin of the ophthalmic artery being within the cranium, and its course into the orbit, would lead one to think an inflammation of the eye denotes a disease within the cranium."

He thinks Sir Gilbert Blane is mistaken in supposing that any cases of headach from indigestion are seated in the integuments, because it is more likely that the brain should sympathise with the stomach than that the integuments should do so.

Our author now proceeds to notice some of the pains of the integuments of the head which are improperly called headach. "These pains are such as occupy one-half only of the head," and when they attend diseases of the symmetrical organs they are generally seated on the same side with the affected organ.

"First. There is a Hemicrania or a Heterocrania, which is periodical, returning every morning, at sun-rise, arriving at its heighth by noon, and remitting and ceasing about sun-set. This seldom lasts beyond the fourteenth day. But it may return every evening, or every night, and observe the same times: this, however, is very rare. A Hemicrania may also return at the same hour every other day, or every eighth day."

"Secondly. Another Hemicrania, which may return and be periodical, is a Neuralgia, or Tic douloureux."

When it is exactly periodical and returns without any evident cause, he suspects that it is complicated with an intermittent.

Thirdly. A Hemicrania may arise from a fracture of one of the tables of the cranium. "When the pain is fixed to one spot or returns always to the same spot," pressure of the integuments, if it is seated in the external table, and holding the breath and making an effort, if in the internal, will increase or renew the pain.

"Fourthly. A pain of one side of the head is very common to those, who during the winter, sit always on the same side of the fire;" "it may be occasioned by exposing the feet and" he thinks the "hands to cold," also by the cutting of a dens sapintia late in life.

Fifthly. A Hemicrania may be produced by exposing one

side of the head to the northeast wind during free perspiration, by pressure or the portio dura of the seventh pair of nerves, and by an inflammation of the ear.

"Sixthly. An exostosis on the cranium, from whatever cause arising, may occasion a pain on one side of the head,"

"Seventhly. A pain in half of the head has been traced to some disease of a cavity connected with the nostrils: the antrum Highmori.

"Eighthly. There is sometimes a pain on one side of the head, when the eye of the same side is inflamed."

He then describes the nature of the pains which arise from inflammation of the different parts of the eye.

Ninthly. There is often Hemicrania when a foreign body is lodged in the meatus auditorius externus, or when from any cause it is the seat of inflammation.

Tenthly. A Hemicrania may be produced by pus collecting under the temporal muscle or under the occipito frontalis.

Our author's third chapter has the title of "Symptoms of Headach," and is the most ingenious part of the whole book. After premising some truisms about "descriptions," he introduces Araeteus, who he says "scarcely omits any symptoms that has ever occurred in disease;" he next presents to us another worthy ancient, Coelius Aurelianus, and at last brings in Celsus from whom he immediately procures those signs which that great man had selected as indicative of cephalaea. He then tells us that instead of giving us a description of his own, "he will make a short comment on those signs only" which he has received from Celsus.

"Celsus expresses himself thus: In capite autem interdum acutus et pestifer morbus est, quam κεφαλαιαν Græci vocant, cujus, notae sunt Horror validus, nervorum Resolutio, Oculorum Caligo, Mentis Alienatio, Vomitus, sic ut vox supprimatur; vel sanguinis ex Naribus Cursus, sic ut Corpus frigescat, Anima deficiat. Praeter haec, Dolor intolerabilis, maxime circa Tempora, vel Occipitium."

"*Praeter haec*" entitles "*dolor intolerabilis*" to the first place in our author's comments, but as he has in another place let us know what Celsus meant by the term, he now only tells us that "there is no more early sign than an *intolerable pain in the head;* and no more prominent, inseparable, and diagnostical sign, if a disease be a regular conjunction of symptoms, a whole indivisible from beginning to end."

"*Horror Validus.*" Our author thinks that "no chillness attends it; no increase of heat, no greater frequency and fulness of the pulse follow it; that it is confined to the upper part of the body: which is in a profuse perspiration; and that therefore it depends, perhaps, upon a shock received in the very centre of the nervous system, which is instantly felt in its whole extent."

"*Nevorum Resolutio.*" By these words he thinks Celsus meant, "as usual, a palsy;" and it seems to our author natural enough that such a horror as the above described when it is an ineffectual effort of nature, should be followed by a paralytic affection. He never saw an instance of cephalaea without palsy in some part of the body.

"*Oculorum Caligo,*" he takes "to be an expression of great extension, and to stand for almost every disorder of vision in which there is no organic change."

Although Celsus does not notice the affection of any other sense than that of seeing, yet our author ventures to tell us that "hearing, smelling, and tasting, may all be affected in cephalaea."

Indeed, he says, according to his experience, deafness is very common in this disease, and that according to Hippocrates if "slowness of speech, and torpor of the hand," attend this deafness, we may expect apoplexy or palsy; if "eruginous vomiting," we may look for insanity. He then gives a long and most poetical description of the "mental misery" which is produced by that degree of deafness which attends cephalaea.

As to taste he has often known it to be disordered in cephalaea in various ways.

"Morbid acuteness in smelling often precedes epilepsy." &c.

"*Mentis Alienatio*," he thinks, means "an aversion to the intension of the mental faculties, and even the exercise of them." "It is painful for the patient to think, therefore he avoids it." He says that insanity and headach are incompatible, and that he never knew a case of the latter "in which the imagination was at all employed."

"*Vomitus*."—Our author admits that "cephalaea may have been a more desperate disease when Celsus saw it, than it is in our climate;" yet he thinks Celsus "can neither intend the antecedent to loss of voice to be the mere vomiting, nor the antecedent to coldness of the body to be the mere bleeding from the nose; but, in both cases, the conjunction of all the preceding symptoms." He tells us that vomiting is frequent in cephalaea, at first of green bile, in the progress of the disease sometimes of black bile, but that spontaneous vomiting is a good sign.

"*Vox Supprimitur*."—Our author tells of a great many ways in which the voice may be lost, but he owns that he cannot tell whether a patient in cephalaea "will not speak or cannot speak."

"*Sanguinis ex naribs cursus*."—This our author translates "a dribbling of blood from the nostrils," because, he says, where Celsus speaks of a salutary bleeding of the nose, he uses "profusio prorumpit, &c." He thinks this dribbling is a bad sign." He says that "it has been known from time immemorial, that whether the blood trickle down, or gush out in a continued stream, if it be attended with a coldness of the body, or a cold and clammy sweat, it is a bad sign."

"*Animae defectio*." In his opinion Celsus means no more by these words than "that sudden diminution of the sensorial, the nervous, and the muscular powers, which is common to the end of all diseases of debility."

Our author commences his fourth chapter with the consideration of the "kinds of headach." Every one of the epithets "bilious, nervous, spasmodic, gouty, &c. contains an hypothesis which he does not understand, and which he is persuaded no body else does. Of *bilious* headach. He thinks if bile is in the stomach, or in excess in the intestines, that vomiting in one case, and diarrhœa in the other, is produced, not headach. Bile, he thinks, never enters the blood because it "is never found in the lacteals;" "because jaundice arises sometimes in an instant," and is sometimes seated in a part of the body only, and it is often produced when the liver is not affected, &c.

*Nervous headach.*—Our author asks, what headach is not nervous, and how can that epithet be applied exclusively to any headach? It appears to him that in the commencement of most diseases, there is "an antecedent state of the nerves upon which that of the blood-vessels depends."

He says that a sympathetic may always be distinguished from a real disease of a part; for the "purely sympathetic disease of any part has no accedent symptoms—no epiphaeno mena," &c. "but corresponds exactly with what ought to be the logical and diacritical definition of some real disease of that part."

*Spasmodic headach.*—He thinks that every headach being equally attended with spasm, is equally entitled to that epithet.

*Rheumatic headach.*—He thinks it is probable that rheumatism affects the dura mater; but he says, if headach be what he has defined it, it cannot be rheumatic.

He tells us that the predominant cause of headach may always be known by the existence of two signs, and sometimes that of one—which are "an imbecility in the head," and "a misshapen head." The signs of this imbecility are any "momentary or evanescent disorder" of the senses—any permanent disorder of the sense having reasons for study &c. About a misshappen head, he talks a great deal—he tells us that "a

headach has often been traced by the mere figure of the head to some remote progenitor, the predisposition not having been excited" in the intermediate generations. He is, therefore, very much in favour of family portraitures, and tells us that he has seen one which as a physician, he "considered far more valuable to the family than Le Brun's picture of the massacre of the innocent could have been."

*Temperament.*—He thinks that one temperament gives as much predisposition to headach as another, yet he believes that a predisposition to headach is connected with a less frequent systole of the heart, because "children whose pulse is frequent, are not very liable to headach."

"*Fevers* attended with congestion or inflammation of the head" may leave behind them a predisposition to headach. scrofula gives the predisposition to headach. He observes that persons with dark hair and a skin "not remarkable for fineness of texture," are subject to scrofula. "The women" whom our author has found most subject to headach, were the "arrogant," the irrascible," &c. Syphilis and syphiloid diseases leave a predisposition to headach. He then tells us of a great many injuries of the head and their remote consequences, which produce predisposition to headach. And lastly, he speaks of the great difficulty in determining the seat of the cause of headach by post mortem examinations, and of the high and many requisites for a physician who treats headach.

Having shown the division of headach into bilious rheumatic, &c. to be hypothetical, and having spoken of the predisponent causes, our author "presumes that the reader has clearly seen that there are two kinds of headach;" cephalalgia, in which each succeeding paroxysm is less violent; and cephalaea, in which it is more violent. He then passes to the consideration of the occasional causes of headach. There are so many that he cannot "pretend to enumerate them all;" yet he presents us with a number sufficiently great to satisfy any one,

that scarcely any thing goes on, either in or about the human body which may not be the "occasion of a headach." He "premises, in order to avoid repetition," that impressions made on our organs of sense are the "occasions of sensations;" that the eye cannot hear, nor the ear see;" that we obtain our knowledge of external objects by means of our senses, and that we reckon five of these senses, although "some resolve these five into one, and others add a sixth."

"*Recollection*, or *active memory*, or *ready memory*, which depends upon the will of the individual, is a common occasion of headach." Under this head, he speaks at some length of "thought," "study," "education," "derangement of the mind," and the "reasoning of brutes;" passions—anger and grief most frequently occasion headach. Appetites—hunger, thirst, &c. also are frequent occasions of headach—desires occasion headach—so does "sensibility fostered preposterously."

Sleep, not in a recumbent posture, or at unseasonable hours, may cause headach. Here our author enters into a consideration of the cause and phenomena of sleep. Heat of the atmosphere, particularly in crowded rooms, may occasion headach.—"Headach from insolation" he advises to be treated by prompt and large depletion, and by cold applied to the head. "Cold applied to any part of the body may occasion headach, on which account "headachs are most frequent in winter."

*Hair of the Head.*—Headachs are sometimes cured by shaving it off, and sometimes they are produced by baldness.

The *Skin* and mucous membrane absorb many of the substances to which artists, mechanics, &c. are exposed, and become the occasion of headach.

Carbonic acid gas and vapour of burning charcoal may occasion headach.

Shoemakers, Tailors, &c. who lean forward and compress the abdominal viscera, are very liable to it.

Stays may occasion headach; metastasis of a great variety of diseases is the occasion of headach—convalescents are very lia-

ble to headach from being "crammed with delicacies," or from stimulant medicines.

Beer, wine, brandy, &c. often occasion headach. Amputation of a limb may be followed by headach, "if there is a predisposition to it."

Our author "next speaks of those affections of the thoracic, the abdominal, and the pelvic viscera, which may occasion a headach."

*Lungs.*—A headach may be occasioned by disturbed respiration from any cause. He "knew one who died, while he was in a dance, as suddenly as if both his phrenic nerves, and his spinal marrow at the lower part of his neck had been divided." Coughing and laughing are frequent causes of headach.

*The Heart.*—Increased action and hypertrophy of the heart, never occasion headach, nor do they ever produce a predisposition to it.

*The Liver.*—Many of its diseases occasion headach.

*The Stomach.*—Our author describes the whole process of digestion. "He says, the headachs referred to the stomach, which I shall notice, are independent of any organic disease, as scirrhus, cancer, stricture, &c. Indeed, I am not certain that organic diseases of the stomach ever excite a headach."

"The first headach is that from over-distension of the stomach, in a person in good health." The second is occasioned by hunger in a healthy person when he abstains from eating a longer time than usual.

The third is that which is traced to a weak stomach when empty. To remove this state of the stomach he advises the use of flannel and "dejection at regular hours of the day," and when necessary, sulp: magn: spontaneous vomiting is always followed by relief, but that excited by emetics never.

The fourth is that headach "to which the chlorotic and the hypochondriac are peculiarly liable, which comes on with a pain of the stomach not immediately after taking food, but

as soon as digestion begins." He advises calomel at bed-time, with a saline purgative next morning, twice a week, and during the pain some grateful aromatic; also the mixture a ferri composita, and a blister applied to the epigastric region, or to the back. The best diet is broiled meat; no broths should be taken; the beverage should be pure water, and exercise in the open air should not be omitted for a day.

The fifth is that headach in which the patients "have no appetite for ordinary food, and therefore seek for condiments." The pain generally extends to one of the eye-balls, it is attended with heart-burn, disagreeable eructations, &c. "This state of the stomach" is to be relieved by a vomit, and after it daily, sulphas magnesia in peppermint-water. "To cure the disorder," calomel should be taken in small doses every night, if necessary, with gentle laxatives, and "to support the strength," cinchona, columba rhubarb, &c. should be used; diet as in the fourth headach.

The sixth is occasioned by worms irritating the stomach.

The duodenum from indigestion may occasion a headach.

The rectum,—stricture of this intestine and impacted fæces in it may occasion headach.

The kidneys, &c.—ischuria renalis and ischuria vesicalis, are often attended with headach.

The ovaria, uterus, and mammæ;—our author considers, "not the uterus, but the ovaria, as the cause of headach, connected with menstruation," and then goes into a long discussion of menstruation.

"Pregnancy," "cessation of menstruation," diseases of the "ovaria," and of the "male testes," all occasion headach.

Our author's last chapter has the title of "Cure of Headachs."

Assuming that a headach is what "he has defined it, and also that there are two kinds of headach, cephalalgia and cephalaea, in which either the whole head, or only

one-half of it is in pain, the first inquiry is whether the disease be sympathetic."

It is easy in hermicrania to distinguish a sympathetic from an idiopathic headach, "for we may search after the part with which the brain sympathises on the same side of the body." "When a pain in the head is sympathetic, it is cured by removing the disease of the part, with which the head sympathises." "It is the property, however, of a sympathetic headach to occasion either a partial, or a general distention of blood-vessels in the head." In the partial distention, "when there is an undue circulation and distribution of the blood," the sensibility is increased. In the general distention the sensibility is nearly destroyed, the pupils dilated, and limbs relaxed, &c.—"Therefore if the headach increase, and the sensibility of the body also increase," the disease has become idiopathic, and new symptoms can be traced to it.

Here our author presents us with "the outline of a hypothesis of cephalalgia." There must be a distinct predisposition to the disease. This predisposition seems "to consist in a peculiarity of structure in some part of the cranium." This peculiarity is either congenital or acquired from diseases or injuries, from which patients are said to have recovered.

Having spoken of some of these peculiarities, he now directs our "attention to that which is common to them all; such a distribution of the blood as differs from that in the generality."

This peculiar circulation within the cranium is compatible with the exercise of all the faculties of a person liable to cephalalgia, but this peculiar circulation, "in any part of an individual, is more easily disturbed than a circulation which is common to that part in the species."

This disturbance gives the predisposition to the disease, and when it becomes somewhat permanent, cephalalgia arises.

But this disturbance cannot be permanent without an unusual "occasion acceding." These occasional causes are proba-

bly "all such as act by producing a debility and dilatation of some of those blood-vessels within the cranium, in which the predisposition to cephalalgia consists."

Dilatation of blood-vessels in inflammation is preceded by that of the capillaries, but in headach it is not, so that in the latter there is no fever nor acceleration of the pulse.

Pains depend as frequently upon a defect as upon an excess of stimuli; as in headach preceding fevers, in that after great loss of blood, in that of feeble persons, &c. A headach often follows, but never accompanies an accelerated action of the heart and arteries. Cephalalgia may therefore be induced directly by causes that occasion a diminished action, and indirectly by those which give rise to increased action, "the action in either case is through the nerves of the arteries. Perhaps the blood itself, as well as the arteries containing it, is under nervous influence."

This hypothesis of cephalalgia, our author thinks may "mutatis mutandis, explain all the phenomena of cephalaea, considering by what a number of facts, generalised by induction, it is proved, that in the seat of the predisposition to this headach there is a tendency to disorganization, or an adventitious part of a malignant tendency deriving its nourishment, parasitically, as it were, from some original part next it, but living and increasing by its own peculiar powers."

*Treatment of headachs.*—Not only may the same means relieve one and increase the other in cases of cephalalgia and cephalaea, which resemble each other, but in similar cases of either, the same means diminish one and exasperate the other. Even in "different cases of cephalalgia, I am persuaded, that a degree and kind of stimulus may cure one, which increase another; and that I shall not err much, if I lay it down as a fact, that in every case of cephalalgia, debilitated and distended blood-vessels are to be made to contract by stimulants proportioned to their debility; and in every case of cephalaea, a specific action is to be diminished, and the means of restoring the natural action are to be employed."

"*Of Blood-letting.*—The most common remedy in all pains of the head, is blood-letting; as if the head contained a quantity of blood greater than usual."

"A pain in the head is often attended with a plethoric state of the body: but it does not follow that there is then an accumulation of blood in the head. Yet, if the body be plethoric, as it may occasion pressure on the brain, blood-letting is necessary. But a person may be thought plethoric, when he is really not so, and when his constitution does not easily bear a loss of blood. Therefore, blood-letting, which has a tendency to increase the disposition to plethora, and to render its own repetition necessary, should not be had recourse to without the utmost caution."

A headach from sympathy, as that from suppression of the menses or from metastasis, as that from suppression of hæmorrhois, is increased by leeches applied to the temples, or by venesection of the arm, but quickly relieved by drawing blood from the neighbourhood of the parts originally diseased. Although blood may be drawn when there is too much in circulation, yet when there is *merely* an irregular distribution of it in some part of the head, blood-letting aggravates and prolongs the headach. It however excites a contraction of the vessels, and may sometimes be used.

*Arteriotomy.*—Our author has never known any advantage from this remedy, but he has seen sudden and alarming increase of that debility evident in all headachs.

"*Phlebotomy.*—If a pain in the head occur in a plethoric person, he should lose blood from his arm." If not plethoric he should not lose blood at all.

"If a pain in the head be sympathetic, whether the patient be plethoric or not, he should be bled from the part with which the head sympathises, or from as near this part as possible." Perhaps after this, if the headach continue, it may be proper to draw blood from the head, as the "brain may begin to be compressed or irritated;" but this should

only be done to produce contraction of distended vessels, and to restore the natural circulation through the brain, and should not be carried to the extent of fainting or great debility.

*Purging.*—This is another mode of producing contraction of the dilated vessels, and of restoring the natural circulation of blood through the brain.

"It is in vain that the attempt is made to cure a headach, if the bowels be loaded with indurated fæces, and if the secretions into them be suspended, diminished, or vitiated."

In protracted headachs, as there may be "a coacervation of fæces retained in the rectum," even after blood-letting and repeated purging, he always orders "an ounce of soft soap dissolved in a pint only of water, to be slowly injected into the rectum.

*Vomiting.*—Our author has known vomiting to remove a cephalalgia, "not a cephalaea." It is dangerous in headachs of old persons, and should always with them be preceded by blood-letting.

"*Pediluvium.*—The pediluvium is most efficacious after bleeding; it should be hot enough to redden the skin; and it should be employed for half or three quarters of an hour."

*Drinking of hot Water.*—Of this remedy he has no experience.

*Hot or cold Water on the Head.*—The latter our author has often known to be efficacious, but not the former.

*Sweating.*—He has employed dec. sarsap. comp. with great success.

"*Compression.*—When it relieves a headach, it must be I should think, by determining more blood to the inside of the cranium, and by so increasing the momentum of the blood in the internal carotid artery, as to bring about a contraction of diluted vessels."

*C. of the Cerotid Arteries.*—Sometimes relieves a headach which is kept up by a general plethora.

"*Blisters.*—Blisters, issues, setons, and tartar emetic oint-

ment rubbed into the scalp, bring blood to the surface, and lessen the irritation within: but I do not think they cure a headach in this way; but by exciting the dilated vessels to contract."

*Oleum Succini*,—Rubbed on on the spine, "is said to have cured a headach."

*Inustion, Moxa.*—The same may perhaps be said of these as of blisters. Our author has no experience in the use of them.

"*Internal Remedies—Tonics.*—Cinchona, sulphate of quinine. These are certainly powerful remedies for headachs, especially for such as are periodical.

"*Antispasmodics.*—Opium, æther, assafœtida, valerian, camphor, and camphor with extractum hyoscyami. These quiet nervous irritations attending headachs, and sometimes headach itself.

"*Tiglii Olium.*—A drop or two of this oil on the tongue is said to have cured tic douloureux."

Our author has not thought it necessary to point out such of the above remedies as are "exclusively applicable to cephalalgia or cephalaea;" he proceeds, "however, to consider briefly, what is to be done in cases of cephalaea."

One cannot entertain a hope of curing this disease and ought to be cautious in giving remedies. Some of these employed in cephalalgia cannot retard the increase of the predisponent cause of cephalaea, and others may hasten it. Such powerful means as are salutary in the former are dangerous in this. In one there is "mere morbid action, in the other disorganization from a specific cause." Ossifications within the cranium. A headach may derive its predisposition from them and yet not be a cephalaea, for tumours, when forming in the head, may occasion long continued headach, and yet when they have ceased to enlarge, they may also cease to cause pain. "Ossifications have been found within the skull of those who never had a pain in the head."

Enlarged tumours deep in the brain, may lie innoxious as a bullet sometimes does in a muscle.

Effusions and extravasations after symptoms of compression and irritation cease, never leave a predisposition to headach.

"Lacerations of the brain healed by the adhesive process do not always give a predisposition to headach."

A predisposition to headach, induced by a venereal disease has no doubt been removed by the use of mercury, but dispositions under the periostum, &c. resembling venereal affections have been caused by its use.

Our author thinks that an effusion of two or three ounces of water in the brain is not the consequence of headach, nor to be considered as a morbid phenomena, unless signs of acute hydrocephalus preceded death. If a person have had scrofula when young, or have hæmatodes in any part of the body, then a constant headach may suggest that such a disease is going on in the head.

"In every case of cephalaea, it is a good rule to diminish the specific action, if this be possible; at least not to increase it. By strictly observing this rule, if we do not cure the disease, we favour the return of the natural action of the part which is its seat."

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ART. VI.—*A Treatise on the Effects and Properties of Cold, with a Sketch Historical and Medical of the Russian Campaign.* By MORICHEAU BEAUPRE, M. D. Regimental Surgeon in the French Service. Translated by JNO. CLENDINNING, A. B. & M. D. Edinburgh, 1826.

THE claims of authors on the reviewer, are of a tripple kind. They rest either on the value of the facts presented, as the result of their observation; on the judicious arrangement of these facts; or, on the ingenuity or logical accuracy with which they draw their inferences from them. Experience, judgment, and genius, may be here said to constitute the three feet of the tripod on which alone the fame of a writer

can sit securely and permanently. Remove either, and though he may not necessarily *fall*, he will cease to occupy an upright position. To the medical writer, the first is unquestionably that which will sustain him longest,—he who possesses an experimental knowledge of the topics of which he treats, resting his reputation on the memory and reason of his readers—while he who can do nothing more than compile from others; or, he who wildly speculates, is deserving of little more in the first case, than the credit of performing a service which every thinking mind will, after all, perform for itself; and in the second, of merely yielding food for amusement to those who may deem his fancies worthy of attention. Varying, however, from each other in value, as do these three ingredients of respectability in authorship, all we repeat, are necessary in a greater or less degree, to entitle him who ventures before the public, to the meed of praise to which he aspires, and which every liberal reviewer would cheerfully, when he may *justly*, award to him.

To what extent the work now before us may be found endowed with these qualifications, we shall leave to our readers to decide, as it is our purpose rather to present an analysis of its contents, than a critical examination of them. The author, as we are informed in the translator's preface, served under Napoleon as Regimental Surgeon in Italy, Germany, Poland, Russia, &c. United with the army of that great but misguided conqueror, in his march to Moscow, and in his calamitous retreat from the ruin in which his invasion had involved that splendid city; opportunities could not be wanting to Beaupré, or to any of his fellow surgeons, of observing the peculiar influence of *cold* over the animal system. Whether these opportunities were properly improved or not, can only be determined by a perusal of the volume. As far as our sketch extends, it will be found to justify us in recommending such perusal.

A general outline of the arrangement we quote from the translator's preface.—He divides his work into nine chap-

ters, of which the 3d, 5th, 7th, and 9th, are the leading ones—In the 3d chapter he considers cold physiologically. In the 4th chapter he gives a rapid sketch of the Russian expedition, the most gigantic, unhappy, and instructive of modern times. Our author was taken prisoner at the passage of the Beresyna, and remained some time in captivity. In the 7th chapter, he answers the query, how many different indications may cold be employed to fulfil? He points out seven modes of acting on the organism; in other words, seven therapeutical effects which cold is capable of producing when properly employed Those modes of acting he calls "properties of cold," distinct from each other, although so combined, that in general without considerable address, or else good fortune, no one of them can be brought into operation, so that its effects can be observed altogether unmixed with those of more or fewer of the rest. The 9th chapter, comprising more than one-third of the volume, he devotes to the therapeutical history of cold. In this chapter, instead of choosing the arrangement best calculated to illustrate his views, as to the varied operations of cold, he has imitated preceding writers in adopting a nosological order (similar in this case to that of the "Nosographie Philosophique") which seems to have no advantage, but that of facility to the author. In addition to this hasty expose of the course taken by the author, the translator furnishes us with an appendix containing notes which "are, for the most part, either intended to strengthen some positions of the author, which appeared to need farther evidence, or as *riders* on clauses in the original, containing decisions too exclusive and unqualified. The latter consists principally of facts from obvious sources, evincing the necessity of restricting the textual positions to which they relate."

With this preliminary notice, our readers will be able to follow us from chapter to chapter of the work, and to form some judgment from our selections and remarks, of its value.

In the first chapter, the attention of the reader is called to

nothing new. It is appropriated to a few general observations on caloric, referring chiefly to the mode in which it is generated within the system, and to its stimulant influence as one of the most common supporters of life. Several physiological remarks are also made on the causes which may lead to the vast diversity existing in the susceptibility of different individuals, to the impressions of this universal agent. The capacity to endure an excess, and likewise the inconveniencies of a deficit of caloric, are also noticed.

On this subject, the author makes the following trite observations in concluding his chapter. "The quantity of caloric proper for the support of life and of the equilibrium of health, is always moderate." "In medio tutissimus ibis," is doubtless no less important a maxim, when the heat of our bodies is in question, than when our moral conduct is concerned; yet we do not find it of sufficient force to impel us to add to our quotation the additional views of Dr. Beaupré touching the pernicious consequences of too powerful excitement from "external accumulation, or from preternatural increase of animal heat, owing to morbid exaltation of the vital movements, &c. &c." The case recorded by him in his note, page 11, illustrative, as he conceives, of the "sudden decompositions of the mass of the blood,—that rapid dissolution of the organic elements, that occur from excessive and prolonged heat,"—we may recite in the author's own language, and leave our readers to form their practical opinions on its nature and treatment, without forestalling their judgment or doing violence to their hypotheses.

"Towards the end of July, 1811, during my evening visit, there was brought to the Military Hospital of Treviso, a Dalmatian soldier, twenty-six years old, who, by his comrades' account, had suddenly fallen senseless on the rampart where he had been two hours on guard, exposed to the whole power of the sun; in that condition he was found when they came to relieve him. I examined him, the extremities were almost as warm as in the natural state; the face pale and tender; there

was total loss of motion and feeling, black dissolved scorbutic-like blood flowed from the nasal fossæ, which I immediately plugged up (!) In separating the jaws, I perceived not only the cavity of the mouth filled with blood, but also the whole mucous membrane of the lips, gums, cheeks, and tongue, chequered with livid spots, resembling nothing more strikingly than scarbutic spots. I found the belly somewhat inflated, and the hypogastria distended; I introduced a catheter (quare?) and there came out at least a litre and a-half of black blood, mixed with urine; the pulse was small and very feeble. I had a *fomentation* of cold water immediately applied to the abdomen; I prescribed a potion of decoction of cinchona, tincture of canella, and sulphuric acid, with alcohol; I had, besides, blisters applied to each of the extremities. The patient (as might have been expected) *died* six hours after entering the hospital. On dissection, I found the bladder filled with putrid, fetid blood; the whole extent of the mucous membrane of the nose, pharynx, œsophagus, stomach, intestines, and bladder, presented the same livid spots as the inside of the mouth; the putridity of the corpse rendered quick burial necessary. The information I procured respecting that soldier, showed, that he had not been sick, and had ever during his whole time with the army enjoyed perfect health."

We fear the relation of this case will be calculated to impress our readers with no very high idea of Dr. Beaupré's skill, either in the art of recording, or in that of physic. That he may not sustain injury from this cause, we therefore proceed to a notice of the contents of his second chapter. In this he treats of cold in general—supplies us with his own definition of the term, in which there is nothing peculiar—notices the influence of habit in enabling individuals to endure almost to any extent the privation of caloric, and enlarges on the diversity met with among the inhabitants of different regions, in their susceptibility to the impressions made by cold arising out of their locality, and the varying conditions of their systems. The influence of the mind over the body is

also spoken of under the same head; and as the following paragraph on this subject, may serve as a specimen of the author's style when he appears more than usually excited, we present it to the reader.

"Facts not less curious than surprising, evince that sensibility is diminished by every thing that effects, or strongly engages the feeling principle; the continued and obstinate direction of the intellect and passions towards any one object, such as that caused by a strong affection, by political fanaticism, or military, or religious, by grave and serious occupations, by impassioned attachment to art or science, &c. while it concentrates the sensibility, renders the body inaccessible to the various external impressions, and even to the action of cold. An instance has been mentioned of a fanatic who made for himself a bed of snow to mortify his flesh. It has not been very rare to see persons plunged in profound meditations remain insensible to the keen darts of an excessive cold. The lover who but that he burns with passion, would tremble for cold, bears the rigour of a freezing night, watching till the delicious moment of meeting. The fashionable lady, lightly clad as in the warm days of summer, fully possessed with the desire of pleasing, and the brilliant effect of her finery, endures, without complaint, a temperature which under any other circumstances, would make her shudder, and often receives the arrow of death without perceiving it. The indefatigable hunter forgets every thing for the satisfaction of his passion; we see him expose himself to the piercing north-east wind, in the depth of the rudest winter, plunge into icy marshes, impatient to surprise the aquatic bird; he traverses the valley, cold and wet, penetrates the woods, amongst the brambles, in pursuit of the timid hare and nimble roe-buck. It is of him Horace has so gracefully sung:

'Manet sub Jove frigido,
Venatar, teneræ conjugis immemor.'

"Figure to yourself again, Charles XII. asleep at midnight in December, on straw or a plank, at the siege of Frederickshall in Norway, there as in the Ukraine, you see him insensible to

the assaults of the freezing element, and entirely absorbed in his plans, his projects and his situation."

This we think will suffice to satisfy our readers of the manner both of the author and the translator. To the matter of the former we shall now confine ourselves, as of far more importance than his diction.

The division of cold into real and sensible, may serve to render the after observations of the author more intelligible, and deserves therefore to be adverted to:

"Real cold is produced by an external cause, viz. by the air and other bodies whose temperature is much lower than that of the blood. All healthy individuals feel and appreciate its effects; it must be considered as either absolute or relative. It is absolute after the temperature passes below 32°. In this case no doubt zero is a conventional term, for there is still caloric remaining; there is therefore physically speaking, no absolute cold or total absence of caloric; but waving the precision of physical logic, we shall regard cold from 54° to 32° and below, as absolute, in respect to its active and permanent power over the body, whose natural temperature it tends to repress. Relative cold is always proportional to the greater or less difference of temperature that exists between our bodies and refrigerating agents. We experience its action in passing from heat to cold; or infinity of causes that effect sudden refrigeration of the atmosphere, as an icy north wind blowing suddenly in summer—the formation of snow or ice, cold rains, storms, extreme coldness at night, succeeding burning heat by day, produce this relative cold.

"Sensible or morbid cold is what most affects the sick; it does not belong to the doctrine of real cold, since it is exclusively the effect of the modification or alteration of the vital properties. Of this nature is that which accompanies the neuroses, and which likewise shows itself at the beginning of continued, remittent, and intermittent fevers; it is not relative to the season; the patient feels it in the midst of summer, or in winter, in a well heated room, and beneath a load of bed-clothes."

The division of what is called real cold is further extended by our author to that which is dry, and that which is humid, but it is not necessary for us to follow him through all the minute ramifications of his arrangement. The next chapter is calculated to interest the medical reader more than the foregoing; and shall therefore receive a proportionate share of our attention. It treats of the "effects of cold on the animal economy," a subject alike important in a physiological and practical point of view. The suggestions with which it commences on the doctrines of the Brunonican school, respecting the influence of cold, will serve to show in part the ground our author intends to occupy in the examination of the question; "is cold tonic or debilitating in its effects?"

"If" says he, "Brown and his disciples had taken the trouble of analyzing, in every point, its action on man, they would have been induced to acknowledge, that the debilitating effects which they attribute to it above all, occur only when it is excessive in degree or duration, and moreover aided by concurrent causes. It is from not having divided cold into moderate, rigorous and immoderate,—from not having considered man in repose, and in motion,—from having regarded cold as an agent isolated from re-action, and having neglected to ascertain the share due to the different states of the body respectively; to that condition of the powers, which always supposes energy or debility, the possibility or impossibility of the re-action, that the Scotch physician has, as we think, pronounced a judgment too exclusive."

To avoid the defects here alluded to, our author presents us, in the first place, with a very accurate and well drawn picture of the effects of cold on the entire frame of a healthy and vigorous man; after which he treats of them under the following distinct heads: 1st, Sensation; 2d, Abstraction of Caloric; 3d, Stimulus; 4th, Contraction; 5th, Spasm; 6th, Reaction; 7th, Benumbing; 8th, Condensation of fluids.—To trace the impressions made by the agent under notice, through each of these steps, is far from being easy, at any time, and

it is often impossible; yet we cannot deny that "the particular examination of each may enable us better to appreciate the powers, salutary and noxious, of cold over man in the state of health, and to attain to the distinguishing of its properties." All other attempts to analyze and arrange the phenomena produced by a cause so powerful, and in a system so complicated, amount to this, and to no more. They serve to supply us with heads of chapters and sections, and on this account may be deemed both convenient and useful, when not made under the belief, that we are establishing a systematic order of things which nature herself will sanction. We do not know whether such a belief influenced the translator of the work before us, or not, in presenting in his appendix the following tabular view of the effects of cold. If so he has, we conceive, fallen as far short of his mark, as he has in his attempt at translation. But on this subject we shall have more to say when we have done with our *author*. We annex the representation as peradventure some one of our readers may be edified by it.

*Abstraction of Caloric.*

- Re-action.
  - Sensation, (Nervous System,) Irritation, Spasm, (Muscle,) Excitement, (Capillary System.)
    - Asphyxia.
      - *Torpefaction or Numbness.*
      - *Irritability.*
      - *Quiescence or Sedation.*
  - Abstraction or Shrinking, (Cutaneous and perhaps other Tissues.)
  - Refrigeration; (Condensation of Solids and Fluids, and more or less complete suspension of the Chemical operations necessary to life.) — *Congelation.*

Our author pursues still further the analytic examination of the influence of cold, by a notice of its effects in the several sub-sections of the general system, the cutaneous, respiratory, digestive, &c. We shall attempt a brief summary of his observations, without adhering strictly to his text. The im-

pressions made by cold on the skin are traced from those which are more obvious and common, to those which are produced only by its long continued and most intense action; from the desirable beautification of the face of the fair lady, and the removal of the wrinkles of the aged matron, to the ulceration and gangrene produced by it in those who have been long exposed to its pitiless power. Between these extremes, however, lie numerous effects, which are observable during our winters, and which it becomes the practitioner to bear in mind. Among these we notice chilblains, the pain excited in the neighbourhood of cicatrices, and the injury inflicted on ulcerated surfaces, by applications of an immoderately low temperature. We agree with the author in deprecating the employment of extremely cold topical remedies for sores, yet we think equally strong objections, and even stronger might be advanced against the common and indiscriminate use of warm applications in such cases. The case referred to by the author, of the *four minutes* convulsion, trembling, and trismus, occasioned by a dressing of cold cerate to a blistered surface, is just such a one as every nurse has seen, when the temperature of her dressings has been either too high, or too low. The section on absorption contains nothing original, although it comes before us with the front of novelty. The amount of it is that the skin absorbs fluids, and that cold diminishes its power to do so. The proofs are given in the following laconic and convincing note.

"Cutaneous absorption is produced by holding a new-born puppy for a-quarter of an hour in warm ink, the urine made afterwards is coloured. This simple experiment will serve equally to ascertain the effect of cold on absorption; it is but keeping the animal in cold ink an equal time. It will be proper to move him about in it, lest he become benumbed."

To comment on this would be inconsistent with our plan, as we cannot enter into a full discussion either of the doctrine or the mode of sustaining it, adopted by Dr. Beaupré.

The only effect produced by cold on the digestive system

which appears to impress itself on the mind of our author, is the inordinate increase of appetite so generally observed by medical writers. The explanation of this fact is not, however, such as we should be willing to adopt.

"Not only does the increased tonicity or contractility accelerate, by its oscillation, the course of the food in the digestive tube, but further, the increased power of absorption binds the bowels, so that considering the quantity and quality of the aliments taken in each season, the excrement is less abundant and harder in winter than in summer."

What is meant by the "oscillation of the contractility and tonicity," the translator may possibly comprehend, though we cannot, nor do we think the author chargeable with the unintelligible phrase, any more than he may be supposed to be with the use of a classic word contained in the following sentence. "An Italian or Spaniard eats one half less than a *big* German, who dines with unbuttoned clothes." So great a difference can scarcely be explained on the hypotheses founded on diversity of climate, whether Germany be admitted to be the *belly* of Europe or not. All of our readers* will, however, unite with the author in his exclamation, "What a cruel torment, when sharp cold comes to whet an appetite one has not means to satisfy."

Under the heads of respiration, nutrition, and secretion, nothing either new, instructive, or entertaining is afforded. In the article on sensibility, the leading points are, the diminution of this animal property, by cold, and the increase of the intellectual energies. The first we are willing to admit, the opinion of the *Translator* to the contrary notwithstanding. The second we beg leave to question, while at the same time we renounce all faith in the dogmas of those who think nothing bright, nothing fervid, nothing capable of being kindled into a poetic blaze, can come forth and flourish

* Whether big Germans with unbuttoned clothes or others.

amid the snows of a northern winter. Much, however, as our minds are unquestionably influenced by climate, through the intermediation of our bodily sensations, they are not so far governed and shaped by it, as to allow us to affirm of the inhabitant of this or of another region, that his imagination is frozen, or his genius of necessity torpified.

In the sections on muscular action and on the procreative power, we find nothing worthy of note, and we may, without injustice to our author, conclude his third chapter with the parallel between the effects of heat and cold on the body, as he has presented it: 1st, Moderate heat like moderate cold, excites organic action; 2d, Heat exalts sensibility, but diminishes contractility; whereas cold diminishes sensibility, but exalts contractility; 3d, The moderate action of heat and cold, are alike conducive to the support of life; their immoderate effects are alike injurious, since they annihilate both moral and physical power. Extreme heat throws into apathy and languor, causes dissolution of the blood, and humours, gangrene, and death. Excessive cold chills, benumbs, debilitates, and produces even sphacelus and death.

The fourth chapter contains a sketch historical and medical of the Russian campaign. The scenes of which it is a record, are pourtrayed in a manner rendered interesting by the participation of the author in them, as well as by the calamitous circumstances with which they are filled. We believe, therefore, we shall incur no censure, for extracting the following concluding paragraph. It is descriptive of the sufferings of the retreating army of Napoleon, and is calculated to awaken reflections of a most melancholy character, while, at the same time, it serves to mark the features of a species of bodily suffering, which cold alone is capable of producing.

"Some pale and depressed by inanition, swooned away and died, stretched on the snow. Others, though provided with some food, at least in quantity sufficient to quiet the cravings of hunger, were seized by shivering, to which quickly succeeded languor and propensity to sleep. They were seen walking

insensible and ignorant where they went. Scarcely could you succeed in making them understand a few words, they had almost entirely lost the use of their senses. In a word when, no longer able to continue walking, having neither power nor will, they fell on their knees. The muscles of the trunk were the last to lose the power of contraction. Many of these unfortunates remained some time in that posture contending against death. Once fallen it was impossible for them with their utmost efforts to rise again. The danger of stopping had been universally observed; but alas! presence of mind and firm determination did not always suffice to ward off mortal attacks made from all directions, against one miserable life.* It happened to me three or four times, to help some of those unfortunates who had just fallen and begun to dose, to rise again, and set themselves in motion, after having given them a little sweetened brandy. 'Twas in vain; they could neither advance nor support themselves, and they fell again in the same place, where they were of necessity abandoned to their unhappy lot. Their pulse was small and imperceptible; respiration, infrequent and scarcely sensible in some, was attended in others by complaints and groans. Sometimes the eye was open, fixed, dull, wild, and the brain was seized by quiet delirium; sometimes the eye was red, and announced transient excitement of the brain; there was then more marked delirium. Some stammered out incoherent words; others had a reserved and convulsive laugh. In some

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* "I shall here record a circumstance, to which I probably owe my preservation. During the frightful night that we left Smolensko, I felt much harassed; towards five in the morning a feeling of lassitude invited me to stop to rest. I sat down on a trunk of birch, beside eight frozen corpses, and soon experienced an inclination to sleep, to which I yielded the more willingly as it then seemed delicious. I was fortunately dragged out of that incipient somnolency, which would infallibly have brought on torpor by the cries and oaths of two soldiers opposite, who were striking violently a poor exhausted horse who had fallen down. I emerged from that state with a sort of shock. The sight of what was beside me, recalled strongly to my mind the danger to which I exposed myself; I took a little brandy and set to running, to remove the numbness of my legs, whose coldness and insensibility were such as if they had been immersed in an iced bath.

blood flowed from nose and ears; they agitated their limbs as if groping. It has been given out that some soldiers, from phrenitic delirium, had gnawed their hands and arms. I take the liberty of doubting it. The nervous symptoms that accompanied death by cold, when lingering, may have deceived those who say they have seen it. I have observed men overpowered by cold; I have seen them uncovering their breast, agitating their arms, as a sick man labouring under deaf delirium in an ataxic fever. In that state they certainly no longer felt desire of food; besides, the spastic pressure of the lower against the upper jaw was constant in most, and only increased with the progressive effects of the cold which caused torpor and death.

"Thus have thousands perished. Most of those that escaped the danger fell sick ultimately. In 1813, a number of soldiers more or less seriously injured by cold, filled the hospitals of Poland, Prussia, and Germany. From the shores of the Niemen, to the banks of the Rhine, were easily recognised, in their persons, the fragments of an army immolated by cold and misery the most appalling. Many, not yet arrived at the limit of their sufferings, distributed themselves in the hospitals on this side the Rhine, and even as far as the south of France, where they came to undergo various extirpations, incisions, and amputations, necessitated by the physical disorder so often inseparable from profound gangrene, and from sphacelus.

"Mutilations of hands and feet, loss of the nose, of an ear, weakness of sight, deafness, complete or incomplete, neuralgia, rheumatism, palsies, chronic diarrhœa, pectoral affections, recall still more strongly to those who bear such painful mementos, the horrors of this campaign."

The observations of the author on asphyxia, gangrene, and death, from cold, contained in his fifth chapter, will be found in many respects practically useful. He divides asphyxia into partial and general, and arranges the various phenomena presented by it under three several heads or degrees.

"*First Degree.*—The action which is felt through the whole body, is rendered more manifest on one of the parts habitually exposed, or not sufficiently defended. The alteration of the

vital properties begins with distressing and very painful formication. The skin of the extremities of the fingers, nose, ears, &c. after having been for a long time red, hard, and affected with painful prickings, grows pale; its temperature and sensibility diminish; its vitality seems entirely extinct. Local numbness gradually takes the place of a disagreeable sensation, of which the person is glad to be relieved, and the consequence is, that he is unfortunately unaware of his state.*

"*Second Degree.*—After entire cessation of pain, the part remains cold and insensible; sometimes phlyctenæ arise; sometimes the change of colour in the skin, which is livid and blackish, evinces, from the commencement, that there is mortification.

"In both of those first degrees of local asphyxia, re-action, which supervenes infallibly, is announced by lively smart pain, as well as by redness of the skin. It is salutary when moderate; but it is not without danger when too impetuous, or when concentrating its action too decidedly on one point. Whether the energetic return of sensibility and contractility be provoked by external heat, or caused by the force of the constitution, the effect is the same; the blood and humours flow into the dilating tissues, and these occasion circumscribed distention; in the whole part an insupportable formication and itching are experienced; sometimes the pain becomes so sharp as to drag forth complaints and cries; ardent inflammatory action is established,

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* "The cessation of pain, or abolition of all vital re-action, augurs in some cases as ill as that which in inflammation denotes transition into gangrene; but fortunately a very simple remedy employed in time prevents that fatal termination. I perceived one day on a journey, that two officers, prisoners of war, and my companions in misfortune, had the points of their noses of a horn white, the colour of old wax. I warned them, and friction with snow were sufficient to remove this first stage of congelation, which they had not suspected; but what appeared to them very singular was, that while I gave them advice, I myself needed the same; my nose was in the same condition: *sibi non cavere et aliis consilium dare;* from that moment we were on the alert; we kept on our guard, and that we might not fall victims to a security alike fatal and involuntary, each begged his neighbour on terms of reciprocal service, to watch over his nose and ears."

along with sharp and biting heat. When the skin, at the highest degree of re-action, preserves an equal redness, there is much less reason to fear its passing into gangrene, than when it assumes a livid or violet marble colour. In the second case, the epidermis rises here and there, and forms brown or blackish vesicles, which are filled with a serous, bloody, ichorous or yellowish fluid, whose presence increases the disagreeable and obtuse sensation felt in the part, and which causes even a state of uneasiness. I express what I have experienced in Russia; in January, 1813, I had to support the rigour of the icy north-wind, for six hours, on horseback. I braved the sharp and cutting pain which I felt at the ear of the side on which the wind blew; it subsided at last, but the part remained cold and insensible. On my arrival at home, I was so benumbed that I could not use my hands, and descended from the horse all at once; I did not feel even the ground on which I rested. The inexpressible uneasiness which deprived me of power, and the desire and impatience to be warmed again, made me neglect the wise precaution of friction with snow. I entered an apartment moderately warm, the pleasant temperature of which would soon have re-animated me; but I quickly experienced, in the lobe of the ear that had suffered most from cold, an obtuse disagreeable sensation, quickly changing into sharp expanding itching pain; the ear swelled, and in less than fifteen minutes acquired double its natural volume; the orifice and depressions were almost effaced; the pain became lacerating, and the heat burning; some large black phlyctenæ were formed, which, when perforated, discharged serous fluid. I was pretty soon relieved, after having the suffering part annointed with fresh goose grease. That remedy was recommended to me by a Swedish lady, as much used in her country, where that sort of accident is very common. I got off with a superficial ulceration.

"The disorder is not confined to simple elevation and fall of the epidermis in layers or by desquamation; it extends also into the interior, which constitutes properly the second degree of local asphyxia; the cold attacks and kills the mass of the skin, the tendons, or the aponeuroses; gangrenous eschars are formed

of more or less extent, which are quickly surrounded by an inflammatory circle.

" *Third Degree.*—This constitutes sphacelus. If to paleness and insensibility of the part seized by cold, be added total cessation of organic action, and a feeling of weight which to the patient seems very great; if an easy separation of the epidermis disclose a livid marble colour of the chorion, and if to the softness and flaccidity of flesh which is insensible to stimuli, succeed exhalation of a putrid odour, we can no longer doubt respecting the complete sphacelus of the limb or part. It is the same dangerous affection which sometimes produces spontaneous separation of fingers, toes, feet, or even a whole member.

" The stupifying action then of cold benumbs so far the vital properties, as to give to the part asphyxiated the appearance of death. But even when every symptom seems to confirm it, there is still time to re-establish its temperature, and recall its motion and feeling.

" It would here be very dangerous to apply the axiom, *contraria contrariis medentur.* It is only in case of very slight numbness, that we can, without inconvenience, employ a gentle, moderate, graduated heat to dissipate it, or make gentle friction with woollen cloth. When, on the contrary, there exists profound stupor and suspension of all motion in the part, heat is unsuitable; its imprudent application would be sufficient to cause rapid gangrene, by making the part undergo a too sudden change of physical condition, which it is not in circumstances to bear. On the other hand, caloric, by its repulsive property, rarefies the juices condensed and stagnant in the inert vessels; the latter are distended, and owing to their incapability of re-acting against the expanding fluids, are ruptured; the juices are infiltrated; the tissues are choaked up; rupture of the skin and cellular tissue take place, and irreparable disorganization leads inevitably to gangrene and sphacelus. Hippocrates very well knew that heat was noxious to limbs asphyxiated by cold. He relates, (*de liquidorum usu*) that a man who had his feet frozen, lost them after having had warm water thrown upon them. I have been two or three times witness to the quick passing of

partial asphyxia into gangrene, in soldiers who placed their limbs very near the fire, to warm them more quickly.

"The true method consists in slowly exciting re-action, in gently recalling the vital properties, and preventing their too rapid restoration. It is proper to begin the application of means efficacious in such cases, on the confines of the asphyxiated part; afterwards it is to be made general, so that frictions with snow or ice are to be employed, or with a sponge soaked in cold water, or the part itself must be immerged in the water: the use of cold, to counteract its own benumbing effects, is a remedy well known, and I may say popular in the north.

"I consider frictions with snow or pounded ice as preferable to all other means, because, besides the peculiar stimulus which those substances prove to the part after recovering a little its sensibility, they exercise likewise a mechanical irritation, which is not, I think, without efficacy in re-animating the contractility of the fibres. Those frictions must be continued until the appearance of the first symptoms of their good effects; we must not however adhere too long to the same degree of cold. From snow we pass to water successively less cold; after the part has become sensible, luke-warm water is used, and ultimately warm water, of which however we must make prudent use.

"If the violet or black spots have disappeared; if the part is soft, supple, and red, we must confine ourselves to simple dry frictions with flannel. It has been further recommended to plunge the asphyxiated part in a dunghill in fermentation,* or envelope it with bags filled with cinders or hot sand; the employment of those latter means of heating should always be of short duration.

"In such cases, as re-action proves feeble, slow, and unenergetic, where the part presents insensibility, and an atony almost œdematous, and where sphacelus threatens, it is allowable to recur to embrocations prepared from oak bark, cinchona, mus-

* "Bernard Valentin mentions having seen a cat, who being frozen with cold and trampled on as dead, was buried in a dunghill; two days after it was perfectly re-established."

tard, aromatic plants, &c. to which wine, alcohol, myrrh, and camphor may be added; the place affected is merely to be covered with woollen cloth. If, at the end of a few hours, the skin have not lost its livid or violet hue, it is to be scarified and dressed with the topical means just named. Turpentine has been also regarded as an advantageous remedy for dissipating numbness from cold; the limb is rubbed with it, and gradually exposed to heat, to melt the resin, that it may penetrate, and it is kept covered up until completely cured.

"Excitants internally administered may sometimes prove useful—they are the same we shall point out when speaking of general asphyxia. Every pathological author has given a comparative view of what happens in an asphyxiated member, and in frozen animal and vegetable substances.

"That comparison turns, first, upon the application of caloric to those substances; secondly, on the employment of cold water to thaw them, and restore their primitive state. In one point of view the action of caloric seems in fact the same, for until the vital properties are fully re-established, it rests under the dominion of physical laws. If the caloric penetrate it suddenly, it acts upon it as upon frozen fruits, which, when brought near the fire, or plunged in hot water, are quickly changed in the texture of the parenchyma, which is distended and torn, quickly loses flavour, and rots without delay.

"As to the second case, it is certain, from experience, that frozen fruit, plunged in iced water, and afterwards in water gradually less cold, thaws gradually, does not lose its flavour, and may be eaten or preserved at pleasure. So also of congealed eggs; meat also is thawed in that manner, fish, and the delicate game that is sent in winter from Archangel and other governments of the north and east of Russia.

"The part asphyxiated, if subjected to a similar operation, resumes by degrees its natural condition; its analogy to frozen fruit extends no farther than the re-establishment of temperature, or the gradual introduction of caloric.

"It is therefore beyond doubt, that the succession of cold applications used on the body of a person asphyxiated by cold, is

intended to prevent external caloric from penetrating too quickly into the organic tissues, and the re-action from taking place too rapidly.

"Independently of those effects, I am convinced that cold acts as a stimulant, less indeed on the benumbed than on the neighbouring healthy part, from which latter must spring the principal re-active efforts, which we excite in local asphyxia in the very temperature that caused it. When congelation is very extensive, re-action will, if we commence rubbing at the point farthest from the centre, be slow to supervene; perhaps even impossible.

"Reaction, gradually superinduced, re-establishes the vital properties in their integrity, without exposing the part to the risk of inordinate and gangrenous inflammation. If it rise to too great height, it is proper to moderate it by keeping the part for a sufficient time plunged in cold water, or by covering it with linen wetted, and often renewed; the heat and redness diminish, the part lessens, and the pain subsides.

"In the case of a merchant's clerk, whose hand had been asphyxiated and inflamed, I once used, with success, a sedative ointment, (prepared from one ounce and a-half of goose grease, two grains powdered camphor, ten grains extract of henbane) which he rubbed in every second hour. If the redness of the skin be very deep and dark; if the part present livid brown and violet spots; and, further, if there arise black phlyctenæ, which should be pierced without removing the skin, we must hasten to anticipate an imminent gangrene, and for that purpose employ fomentations of decoction of cinchona, with acid and camphor, at the ordinary temperature. A remark demanding attention is, that the part must not be loaded with compresses, or bedclothes, and that every kind of compression is to be avoided, and the member to be conveniently supported.

"Gangrene once established, whether primary or consecutive, is to be treated locally and generally on the ordinary principles. According to the strength, and the quick or slow administration of assistance, nature marks out, sooner or later, a boundary between the dead and living parts.

"General asphyxia extends at once over the whole machine,

it presents the image of perfect death; but persons found senseless and deeply benumbed have been recalled to life after twenty-four or forty-eight hours.

"Man re-acts against a rigorous and immoderate cold as long as his strength and courage allow; but re-action has a limit, and a moment arrives when the powers of the vital principle are exhausted, the faculties, physical and moral, remain as if enchained, and at length abandon the body to the progressive and always increasing energy of cold. Shiverings, puckerings, paleness, and coldness of the skin, livid spots, muscular flutterings, are symptoms of the shock given to the vital forces; the person feels syncope approaching, his stiff muscles contract irregularly; his body bends and shrinks; his limbs are half bent; sometimes lassitude and languor invite him to stop to repose; sometimes a feeling of weight and general numbness retard his steps; his knees bend, he squats down and falls; he then feels an invincible propensity to sleep; every thing grows strange to him; his senses are confused; a thick veil darkens his view; his mind grows dull, his ideas incoherent; he stammers and raves: if he be free from suffering, he is often not so from agitation. Should you try to prevent him from stopping and sleeping, should you strongly represent to him the danger he exposes himself to, he looks at you coldly and stupidly; if he has not lost all consciousness, he pronounces with difficulty a few words, entreating to be allowed to go to sleep; his relations with all surrounding objects quickly cease, he slumbers; the parts farthest from the centre of the circulation become cool; respiration, at first interrupted, becomes slow; the contractions of the heart become feeble, quick, hard, irregular, and sometimes painful; the pulse becomes smaller progressively; the central heat is extinguished; the brain is stupified; the pupils dilated; finally, a deep and mortal coma may be regarded as a certain sign of approaching inevitable death, unless the asphyxiated receive timely assistance."

In addition to the remarks above quoted, the author observes, that those who have the misfortune to be buried under snow, perish less quickly than those who when surprised by

cold, remain exposed to the open air, and the observation is confirmed by the experience of others. As cases are never uninteresting to the practitioner, whether they tend to illustrate truth or to expose error, we extract the following:

"In the Bibliotheca Britannica mention is made of a woman, who, having wandered amid the snows, was seized and benumbed with cold. Snow continued to fall. That unfortunate was enclosed by a layer of that substance, so thick, that she remained there eight days and nights, at the end of which time, the end of a coloured handkerchief appearing above the snow, led to her being discovered; she emerged from that gulf with the use of her senses, and took food with eagerness. What is most peculiar in that case is, that after the first numbness, she found herself very well beneath her snowy covering; that she felt neither cold nor hunger; that she felt thirst only, which she satisfied with morsels of snow. We read in the old 'Journal de Medicine,' the history of the death from cold, of a man who, in crossing the Pyrenees, was surprised by a tremendous storm, and buried beneath the snow in a state of numbness. The fifth morning he came out of his torpor; a burning thirst informed him of his existence, and made him bite the snow that surrounded him. He was quite astonished on awaking to find his tomb lighted up; he broke the layer of snow that covered his head, but his efforts to disengage himself were vain, he then implored the aid of heaven, and recalled to his soul sentiments of religion and resignation; at length persons sent in search, found him; at sight of them, the unfortunate cried out, 'wine, my friends, thirst consumes me.' He was extricated; his breeches had slipt off and left his thighs naked; the epidermis was detached; two large wounds had exposed the kneepans; he appeared, however, insensible to pain. When transported into the nearest village, a surgeon, ignorant of the proper way of treating such cases, did just the opposite of what he ought to have done. The limbs became red, purple and black, the patient complained of burning heat. Pilhes, the writer of the history, being called too late, applied cold in vain; the feet came away; gangrene made rapid progress, and the victim expired."

The author recommends in concluding his remarks under this head, a system of practice which we think far more judicious than that which he condemns; yet as it is that now generally adopted, we deem it unnecessary to enter into its details, after having already quoted so much which bears on the same point.

The next chapter contains a series of particular observations on the therapeutical application of cold. We proceed to analyze its contents.

The views of the author on this point are in some respects similar to our own, in others, widely different. For example, we admit with him that cold sometimes acts as a *tonic* in a secondary manner, and that it restores energy without raising it beyond the ordinary degree, by abstracting an habitual or accidental stimulus which enervates and rapidly exhausts vital force; while we feel ourselves authorized to deny that such an effect arises solely from the *external* application of the agent in question. On this latter point, there appears to us, to be no inconsiderable confusion in the author's thoughts.—An abstract of them, leads to the conclusions which are represented by him as *established:* 1st, That cold acts on man by a direct tonic property, derived from vital re-action; and 2dly, By an indirect tonic power, resulting from the abstraction of stimulus or the prevention of excessive diffusion and dissipation of organic activity. After informing us that these points are determined, our author briefly examines the therapeutical effects of cold, under the heads of air, bathing, drinks, and aliments. All his remarks on these several points, are too common-place, to admit of quotation. We proceed therefore, to a notice of the seventh chapter, which treats also of the therapeutical properties of cold. After sketching the history of the employment of cold in various ways, as an article of the materia medica, and as a luxury, the author, as he warns us, approaches "the most important branch" of his work, "which is to determine the properties in question. He says, "an attentive and elaborate analysis has

led me to distinguish seven, viz. 1. A refrigerating property; 2. An exciting; 3. A sedative; 4. An astringent; 5. A tonic; 6. A debilitating; and 7. A perturbing property."

This division we need scarcely offer an objection to, as it cannot escape any one of our readers, that it is in several points absurd. What does it avail us to be told that cold is a refrigerant? and who that has had but the hundredth part of the author's experience, does not know that it will perturb not only the animal functions, but also the movements of the spirit? It sheds no more light on the science of therapeutics to be informed of those truths, than we should bestow on it by proving by an elaborate process of reasoning, that the rays of the sun are heating, and when in excess, anoying.—When we are told that cold is an excitant, we learn something more specific as to the author's notions of it. We quote therefore, what he has to say on this head:

"2. Exciting property. Cold has the property of exciting directly those tissues that experience its action, and sympathetically those organs to which that excitement is propagated. The excitation is energetic in proportion to the intensity of the cold, and to the liveliness and transitoriness of the impression. The nervous systems of the organic and animal lives receive from it a shock that renders them more active, and even, in some cases, rouses them from insensibility and torpor. By means of this property, we succeed in awakening sensibility and contractility, when diminished or suspended, as, for example, in asphyxia or the hsyteric paroxysm. To cut short syncope it is sufficient to sprinkle a little cold water on the face. Hippocrates recommends plunging the feet in cold water, as a cure for the aphonia that succeeds an hysteric fit. Various authors speak of the usefulness of cold affusions on the head, of the application of ice to the eyes, the forehead, the temples, or back of the neck, in cases of amaurosis, whether idiopathic or from local weakness, and of loss of memory owing to stupor and atony remaining after violent shocks of the head.

"The stimulus brings the contractility of the fibre into play,

and contraction consequently puts an end to its state of inertness. It is from the knowledge of this power of cold, that washing of the lower half with iced water, frictions with snow or ice on the sacrum, or on the pubis and perineum, have been employed with success in palsy of the bladder, and in incontinence of urine from debility. Descamps (Journal de Sedillot, T. 23.) relates some cases in which he has observed good effects from injection of cold water into the paralyzed bladder. Washing the abdomen with cold water removes inactivity of the intestines, and provokes stools. Marcard recommends them as a very safe remedy. Cullen mentions that, in certain cases, where purgatives had been employed in vain, cold water thrown on the lower extremities proved of itself sufficient to re-animate the bowels. In the sixth volume of the Edin. Med. Ess. and Obs. p. 556 and 568, we find, on this head, two very conclusive observations. Vaidy, in the article 'Glace,' in the Dictionnaire des Sciences Medicales, relates a case of obstinate costiveness, in which accumulated fœcal matters formed above the hypogastrium, a tumour of the size of an adult head. The patient was made to walk on wet flags, and flannels moistened with ice water were applied to his belly. Alvine evacuations took place without delay. A frigore pedum alvus obstinatior solvitur—Klein. Those examples are, I think, of such a nature as to place beyond all doubt the exciting property of cold."

Of the sedative property of cold we can form no clear idea from the notice given of it by our author. It may not, however, be amiss to refer to the case cited by him as an illustration of its reality:

"I shall never forget a soldier, whose leg was amputated at the military hospital of St. Ambrose at Milan. Some hours after the operation, he began to complain of a pain at the end of the stump, and which increased so much as to cause sleeplessness, and force him to utter piercing cries. Removal of the dressings threw no light on its nature. The employment of the principal narcotics, during thirty-six hours of suffering, gave no relief. At length it was determined that the dressings should

be soaked in cold water, for it had been observed that hot liquids exasperated the pain. The effect I will venture to call miraculous."

As an astringent we are told that the agent under consideration is proper:

"1st, For renewing the contractile force of the tissues, and restoring to the parts the tone and elasticity they have lost. It is employed for removing the looseness of the skin which remains after disease, or is owing to abuse of hot baths; for curing the relaxation of the sacrosciatic ligaments, and the atonic extensibility of the abdominal teguments consequent upon parturition. Emphysema, relaxation of the upper eyelid, œdemas or infiltrations from ligature, yield to the application of ice or cold water. Too great laxity of the scrotum or labia, softness and passive intumescence of the penis from masturbation or abuse of coition, are corrected by lotions and occasional immersions in iced water, or by frictions on the part with ice. By aid of local refrigerants Professor Broussonnet reduced to its natural size, a penis whose corpus cavernosum had swollèn to an enormous bulk, in the case of a young man affected with venereal gonorrhœa. 2dly, Cold assists, and even forces displaced parts to resume their natural situation and dimensions; it prevents also recurrence of dislocation. Iced water acts thus on the prolapsed vagina, uteris, and rectum; also sometimes in hernia. 3dly, It contracts and diminishes the pores, as well as the extremities of blood-vessels and exhalents, when too much dilated; it retards, suspends, and entirely arrests the flow of the fluids; it checks their expansion, and prevents their extravasation or infiltration. Simple washing with cold water is sufficient to arrest hemorrhagies from the capillary system and small arteries. Good effects are obtained from cold promptly applied to bloody tumours from contusion, and to thrombus. Cold cuts short atonic sweats; those profuse passive perspirations that depend on relaxation of the skin exhalents; it succeeds in gleet, and other chronic and too protracted diseases of mucous membranes. Cœlius Aurelianus has cured a purely atonic diarrhœa by iced enemata."

Of the tonic property of cold, sufficient notice has been taken, and we find nothing to attract our readers in the section on its debilitating quality. We therefore pass to the succeeding chapter, after the relation of a case found in the Journal de Medicine, which may not be devoid of interest:

"A woman in labour was attacked with epilepsy. During the fit, which lasted usually half or three quarters of an hour, the patient uttered frightful cries, her mouth was distorted and foamed; her frame, universally agitated by horrible convulsions, was sometimes stiff, as if affected with tetanus; the child's head was presented with an expulsive effort, but the mouth of the womb, which was spasmodically contracted, prevented the termination of the labour. A *douche* of iced water was used; the convulsions ceased forthwith, as by magic; the os tincæ began to dilate; the pumping was continued, and the labour was next day very happily completed."

In the eighth general division of his subject, the author merely notices the various *modes* of employing cold; and in the ninth, proceeds to the consideration of its application to particular diseases. To follow our author through the extensive field on which he enters, would be inconsistent with our limits. We may briefly state, therefore, that there is scarcely a single ill to which our flesh is heir, that may not be either wholly or partially removed by cold, in the estimation not only of this, but of some other writers on the subject. Cold will give new energy to the enfeebled, and it will bring down to the level of health those who are morbidly excited. It will reduce tumours, allay pain, promote the secretions, and in a word do *every thing;*—so proteiform are its powers. We would caution our readers against this medical universalism. *All* diseases are no more to be cured by one remedy than *all* men are to be saved by one sacrifice. We believe, nevertheless, that few of our means of cure are capable of more extensive application to therapeutic purposes than cold. It is an agent, however, which it becomes us to employ cau-

tiously, for its influence is as pernicious, when it is not used discreetly, as it is salutary when it is directed upon the diseased system by sound judgment.

In fine, not only is the subject deeply interesting to the practitioner, but we think the manner of treating it in the work before us, will be found satisfactory to those who may peruse it. We cannot, however, advise the selection of Dr. Clendinning's translation. It is a most wretched version of the original, abounding in grammatical inaccuracies, which are not rendered more excusable because, as he informs us in his preface, it is *close*.

Either an "*abridged*, a *free*, or even a *paraphrastical* translation," (all of which he informs us, "may, according to circumstances," be called for, would have been preferred to the closeness which should lead to such violations of our vernacular tongue. There is, moreover, nothing in his appendix which would lead us to believe that the rudeness of his version arose from the coarseness of his original—nor is there any thing to redeem the favour he had lost in our eyes, before we had entered into the body of Beaupré's remarks. We trust his future labours as a translator may be more successful, or that he may be deterred from further efforts in this capacity.

R.

## ORIGINAL DEPARTMENT.

### Art. I.—*On the Successive Formations of Organized Beings.*

"The interests of Society often render it expedient not to utter the whole truth, the interests of Science never; for in this field we have much more to fear from the deficiency of truth, than from its abundance."

It is proposed in the following pages to endeavour to trace the successive formations of organized beings, commencing with the earliest periods of animal existence, in order to examine their various modifications, from the simple to the most complex.

The present view is offered merely as an outline of one of the most interesting, as it is one of the most recondite subjects of research; we shall first examine the validity of that doctrine which attributes an *uninterrupted* succession in the formation of living beings, which doctrine has been recently most fully developed by Mr. Virey. (*Dict. D'Hist. Nat. Art. Nature.*)

Concerning the successive formation of living creatures, Virey remarks, "all animals, and all plants, are originally only the modifications of a single animal, and of a single vegetable; we may pursue in the composition of their organs, the whole chain of their resemblance. Let us take for example, *physical man*, or the most perfect of *trees*. If we unfold the first, layer by layer, if we abstract by degrees all his parts, we shall deduce from him the whole series of animals, and shall reduce him at last to the most simple term, the primitive type of animality. We may do the same with the vegetable. It is then evident, that this complication of organs, which we observe in the most perfect beings, is produced only by a successive progression, a species of organic maturity, or continued development. The animal kingdom is in some degree only a single animal, but varied and composed of a multitude of species, all dependant on the same origin. In the same manner the vegetable kingdom has been formed from a single vegetable, and it may be said that animals are all brothers, as plants are all sisters.

"This admirable chain of organization in animals and plants, is extended even to the *generation* of each individual. The embryon of a quadruped, for example, during the first periods of fecundation, is nothing but a living jelly, very similar to the substance of a polypus, or to the organized glaire of the zoophite. Some days after, the first rudiments of its members renders it similar to worms and to other animals of this family, it soon acquires vital faculties analogous to those of the larvæ of insects or of the molusca. It passes afterwards to a state similar to that of fishes, and like these animals it swims in a fluid. In the first stage of its being it enjoys scarcely more than the sluggish and obscure life of a reptile,—like which, the young animal is scarcely able to drag itself along; at length it rises to the rank which nature has prescribed for it. The same may be observed of vegetables. Young animals and young plants are of a soft, humid and spongy texture; and old vegetables, like aged animals, are of a dry and hard temperament. In the same manner the most imperfect animals, as the polypes, vermes and molusca, like the most simple plants, as the mushroom, moss and liliacea, are of a very moist and soft constitution. On the contrary, birds and quadrupeds, trees and shrubs, are of a firm and solid consistence. Thus the most simple animals and vegetables represent the youth of living nature; whilst the most complicated animals and vegetables represent the old age of nature.

"Each class of these two organized kingdoms offers to us a scale of the vivification of matter. Life, indeed, so obscure in the simpler forms of being, becomes increased and developed in proportion as we advance to beings more perfect; plants possess only a vegetative existence, imperfect animals appear rather to vegetate than to feel; finally, the most perfect races live, feel and think. In proportion as the vital power concentrates, forming but one absolute whole, the more it is perfected and enriched with organs. All beings tend to vital perfection; thus each individual receives a greater development of faculties in proportion as it advances in age; in the same manner the most imperfect beings aspire to a nature more perfect; it is on this account that species rise incessantly in the chain of organized bodies, by a sort of vital gravitation. For example, the polypus tends to the nature of a

worm, which tends to the organization of an insect; the insect aspires to the conformation of the molusca, the latter endeavours to change into a fish, and so on even to man! Thus, we may say, the monkey aspires, by successive modifications, to the organization of the negro, and the negro inclines to that of the white man. Among plants the same gravitation is observable, because nature always aspires to the perfection of her works. It appears then manifest, that the most perfect beings spring from the least perfect, and that they become perfected by a succession of generations. All animals incline towards man; all vegetables aspire to animality; minerals tend towards vegetables; but the more vital the matter, the greater is its liability to death, because it is possessed of more unity, which may be destroyed at one blow. On the contrary, the most imperfect of animals are the most prolific; they are even so tenacious of life, that they live after having been divided; and reproduce the parts cut off by the knife, and even multiply into as many individuals, as there are pieces, as is exemplified in the hydra and actinea, &c. Vegetables themselves are very tenacious of life, being reproduced by slips, suckers, shoots, and various other means besides grafting and seed. Those beings the least favoured in regard to complexity of life, are indemnified by their fecundity.

"Man is much more easily killed than the earth worm, all proportions considered; if we enjoy more intelligence and sensibility than the fish, this animal is a thousand times more prolific, and more vivacious. Imperfect animals and vegetables are endowed with more physical vitality, ourselves with a greater proportion of sensitive life, and moral feeling. Our existence is principally occupied with the functions of the brain and nerves. Animals spend their life principally in the functions of generation and nutrition.

"Every being, therefore, has an equal proportion of life, but each consumes it after his own manner. The more vitality is expended externally through the medium of sensibility and intelligence, the sooner do the internal organs decay. Animals being chiefly occupied with the internal functions, are more robust and prolific, as well as more exempt from the diseases and infirmities of man, who, in proportion as his existence is more occupied in

thought, sentiment, and exterior affections, has his internal organs debilitated, and his physical powers diminished.

"We thus observe several orders of life; 1st, that of intelligence, which appertains to man; 2nd, that of sensation, which characterizes animals; 3d, that of nutrition, or the vegetative faculty, which is more peculiar to plants, although animals are not deprived of it: but all these different modes of existence emanate from a common source, viz. the soul of the world, or the spirit of God; it is for this reason we say, He fills the world, exists every where; that we live and breathe through him alone. Our souls even are nothing more than emanations from this soul of the Universe, which establishes throughout, harmony and concord.

"It is evident that nature having created a series of plants and animals, and having finished with man, who forms the superior extremity, she has concentrated in him alone all the vital faculties which she had distributed to the inferior races. Man, then, possesses the essence of all organic power; it is in his brain, that the divine power, which has presided over the formation of beings, begins to display itself. It is thus that man is capable of knowing all that is beneath him, for it is only necessary to cause his intelligence to return by that rout which she has followed in the organization of the body. It is in some respects, a reminiscence of the soul, since it passes through the whole chain of animals until it ascends even to man. In order to understand, we have only to develop the inherent faculty of thought, which contains in itself all the elements of human science; this regular development is what we call reason, which exists in every man, though not equally developed in all.

"If this was the proper place we might show further, that the soul aspires to elevate, the body to debase itself! all the inferior parts of animals tend principally to physical life; such as nutrition and generation, whilst the superior parts, on the contrary, containing the nervous ramifications, the senses and the brain, tend principally to moral and intellectual existence. It may be added, that animals excel by brutal qualities, and men by intellectual; and that animals diminish in the former respect, in proportion as they approach the latter. It would be still possible to conceive that if nature should one day create beings superior to man, they

must necessarily be endowed with greater intellectual energy, and less of brutal propensity, just as the inverse is observable in the inferior orders of beings; commencing even in the negro. Such superior beings may possibly come within the plan of nature, as all the nations of the earth appear to have anticipated them in genii, demons, spirits, and angels, which convince us that the human soul aspires, throughout the earth, to a state of higher perfection, and endeavours to ascend the chain of all possible existence, even to the throne of divinity. We are indeed nothing else than the starting point of a more perfect type, just as animals are nothing more than successive points of imperfect man; and as plants are the commencement of animals, or the first stage of their organization."—(*Virey, Dict. D'Hist. Nat. Art. Nature.*)

He continues to state, that we can no longer doubt of the common origin of beings, when we consider their resemblance; thus, all the different kinds of rats, mice, &c. are absolutely the same animal, differing only in size, colour and other superficial characters, occasioned by greater abundance of nourishment, light, heat, moisture, and climate, which are the chief agents in modifying the formative principle of animals. In the same manner, "the cat, lynx, panther, leopard, tyger, lion, &c. belong absolutely to the same original stock." Among birds similar analogies are observable; and this resemblance is equally ascertained among vegetables; every variety of mushroom, the umbellifera, the liliacea, &c. afford still more complete proofs of this truth; and among insects, all the papiliones, the whole family of fleas, flies, and spiders, &c. Nature need only vary in a slight degree the numerous generations of the same plant, or of the same animal, in order to create a multitude of analogous animals, which we name *species*. The most remarkable variations are denominated classes, orders, genera: and all this scaffolding of methods has been invented by the human mind, in order to facilitate the knowing of objects; but which is by no means acknowledged by, or founded in nature; she having produced at first only a single animal, and the most simple vegetable, which she has varied "ad infinitum," and complicated by easy shades, even to the most perfect creatures. "All this diversified machi-

nery of animal existence is co-ordained and united together, like the various pieces of an immense edifice;—and evidently proves the impossibility of *spontaneous* generation. If an animal could be produced by matter, in a state of putrefaction, why should nature employ such complicated apparatus for the purpose of reproduction? whence the necessity of these meanderings, these labyrinths, in order to elaborate, appropriate, and perfect a vivifying fluid? to extract it from the blood and impregnate it with the nervous influence, in order to impress upon it the highest degree of vital energy? Wherefore this superfluous pomp in all the organs consecrated to reproduction?"

The author above quoted, grounds his disbelief in spontaneous generation, principally on two experiments, 1st, Leuwenhoeck, the first discoverer of animalculi infusoriæ, declares, that having taken a piece of fresh veal, and hermetically closed it in a glass vessel during many months, he observed an infectious serosity to flow from it; this he immediately examined with the microscope, and repeated his examination, at various periods, always exactly closing the vessel, and was never able to discover the slightest appearance of animalculi. (This experiment was performed in 1686.)

Since this time Spallanzani and others have repeated these experiments, either in closed vessels, or by placing the substances in a state of putrefaction, in gas *deprived* of *oxygen;* but not the least signs of animation were ever visible; hence Mr. Virey concludes, primitive germs are absolutely indispensable in procreation. To me these experiments are both questionable on the same principle, viz. that oxygen is necessary in some form or other to all stages of animated beings, and this is precisely what was denied in all the experiments above alluded to.

The reasoning which follows is much more conclusive. It appears to us, says Mr. Virey, as utterly impossible, that the simplest atom of living matter could organize itself in putrescent matter, as, that a horse or an ox could leap forth from a mountain of smoke; for if we should combine a sufficient quantity of putrescent or decomposing matter together, why should not an elephant or a man be produced, in preference to animalculi? Another argument of the falsity of equivocal generation,

of the weakness, (or if we may be allowed the expression,) the "*putridity*," of such an opinion, is, the little probability that chance, (which they say presides over such creations,) would at all times produce well formed and very distinct species. It is scarcely possible, if chance was really the parent of these animals, that monstrosities and the most imperfect efforts would not sometimes occur; there is no reason why one sort should be produced to the exclusion of others, or why an assemblage of new species; or thousands of proteiform infusoria, should not occur to baffle description. Why always vibrio's for example, from paste or vinegar, and not every other imaginable species? is it denied this matter, to construct a fish, a crustacea, or any other figure, inasmuch as the thousand circumstances of chance are so variable? Far from this! there are always exactly the same forms, the same species of intestinal worms, or infusoria, which are regularly propagated. And whilst we observe on the surface of the globe different species, as the horse and the ass, mixing together and producing hybrids, *putrefaction* by the rarest privilege, although submitted to chance, preserves, on the contrary, the precise forms of animalculi, constant and perfect species of *cysicircus*, *vorticella*, *volvoces*, *&c.* It is thus sexual generation only, which produces monsters; whilst the pretended *chance* of putrefaction affords the most pure and permanent species; this would be wrong presiding over right, and the laws of wisdom contradicting themselves.

The doctrine of spontaneous generation would appear then, in direct opposition to the established laws of nature; its admission has been generally opposed by theologians, inasmuch as it has been occasionally used by atheists and materialists, as a support to their systems. But all theological considerations aside, we would be inclined to take the facts as they are; and if spontaneous generation can be proved, would admit the same, with all the consequences, whatever these might be.

Theologians, nevertheless, formerly admitted with the peripatetic school, the doctrines of spontaneous generation; and St. Thomas, in many parts of his theological visions, established, that the virtue of Heaven, or what in the present day is called "*cosmic power*," was sufficient to produce the *imperfect* animals,

such as insects; but not the more perfect, as quadrupeds or birds. But theology never decided that new species or unknown races were created in this manner; on the contrary it establishes, that those species which are the daily product of putrefaction, were "*originally produced in their principles*," in the days of the creation of the world, by the Supreme Author. Which is to say, that their germs, or their primitive forms, were assigned them according to general laws from which they cannot deviate. Here then is the hand of God placed over the pretended generation of chance.

The *true* science of nature will thus lend at all times, and under all circumstances, the firmest support to religious sentiment in manifesting the creative wisdom of God.

The idea of the successive formation of organized beings, by means of progressive improvement, which was first, among modern authors, seriously maintained by Lamark, has been thus beautifully developed, and minutely detailed by *Virey;* who thinks he is able to trace that vast and complicated machinery, *man*, though his various gradations, (or rather degradations,) down to the primitive monade, the first invisible atom of organic existence; or mounting upwards, link by link, with step aspiring trod, he climbs through nature, to creation's lord.

The doctrine thus attempted to be taught has been ridiculed by some, and viewed with contempt by others; but whilst we are inclined to consider the views of the author as a splendid specimen of the *Nugæ Philosophicæ*, or of captivating eloquence; they demonstrate to us the necessity, in matters of science, of restraining the imagination within the range of sober judgment; for surely, it is scarcely possible to conceive of a philosophical disquisition approaching nearer to reverie; but as it appears to have been conducted in the spirit of philosophy, in the same spirit it should be viewed as worthy of cautious consideration. The author to whom these remarks apply, is confessedly one of the most eloquent writers of our age: possessed of a brilliant imagination, and stupenduous understanding, he has extended his views over the whole creation; and in purely speculative subjects, he unquestionably stands unrivalled. But unfortunately for science Mr. Virey is no naturalist, and when occupied with sub-

jects purely scientific, which require minute detail, it is no wonder, that his unlimited and *general* views, should occasionally seduce him into error. He who could observe in the different stages of the embryotic fœtus, nothing more than a constrained analogy to the polypus, the worm, the larva, the fish and the reptile, would, by an acquaintance with the laws of coexistence, or the mechanical philosophy on which organic bodies are constructed, have been enabled at this early period of the embryon, to contemplate the rudiments of the most complex and perfect animal; he would have been compelled to acknowledge, that throughout the whole animal creation, no one being is *imperfect;* but that each is equally finished and perfectly adapted to perform its part in the sphere in which its destiny had placed it.

It will not be denied that nature aspires to the perfection of her works; that is to say, that each individual of the most complicated animals proceeds from the most simple point of organization.

The sturdy oak, whose luxuriant foliage constitutes the pride of the forest, at one time formed but a speck in the acorn; and man himself, the self-reputed lord of the creation, sprung from a few atoms, of less importance than the fluids of an animalculus, but we maintain that each animal is equally perfect in its kind; and consequently, that the "*perfect*" [complex] do not proceed from the "*imperfect*" [simple.] .

Nor would we deny, what indeed is self-evident, the general polity of nature, that is to say, the constant and inseparable connexion of her various productions. Vegetables depend immediately for their subsistence upon earthly, æriform, and inorganic particles; animals animalize vegetables; and man subsists upon them all; and in this way *only* can vegetables be converted into animals; the most simple into the most complex beings; and not by successive generations. So far from this indeed, we believe that every truly specific difference observed in animals or vegetables, is solely dependant on a specific difference in the constitution of the primordial germ; and that it is totally beyond the power of art, or any external circumstance, to change this order of things: to convert the lion into a tyger,

a mouse into a rat, or cause the leopard to change his spots. On the contrary, we have not a single plausible reason for supposing that during three thousand years, or as far back as the records of history go, the least perceptible change has been effected on the most simple animals; some of which were accurately described by Aristotle, two thousand one hundred years ago. We have every reason to conclude, that every distinction of existing species has existed from the earliest periods of the formation of the present world; and has its origin ultimately in the nature of the *soil;* every variety of which is marked by a corresponding variety in its animal and vegetable productions; and many of these are limited by geographical distribution. When the island of New Holland was first discovered, the extraordinary peculiarity of its climate, soil, animal and vegetable productions, were for a time the astonishment of the world.

On the same principle, it is rational to presume, that if by any extraordinary revolution of nature, the present state of the surface of our globe should become totally changed, such a revolution must necessarily be attended with a total change in its animal and vegetable productions. New races of animals would march forth, the least intelligent of which might possibly be enabled to contemplate with wonder and admiration, the strange and outrè organization, exemplified in the remains of a former world, as we at the present moment behold the mastodon, megatherium, paleotherium, and other fossil reliquiæ of the preadamitic worlds. Who shall presume to set bounds to that power which commanded, "let there be light, and there was light," which after having formed the fish of the sea, and birds of the air, said, "let the *earth* produce living animals, reptiles, and beasts of the earth, according to their species; and it was done." Finally to perfect the whole:

*Let us make man!* with beauty clad,
And health in every vein;
And *reason* thron'd upon his brow,
Stepp'd forth *majestic man;*

Around, he turns his wond'ring eyes,
All nature's works surveys;
Admires the earth! the skies! himself!
And tries his tongue in praise!

Ye hills and vales! ye meads and woods!
Bright sun and glittering stars!
Fair creatures, tell me if you can,
From whence and what I am?

What parent power, all great and good
Do these around me own?
Tell me, creation, tell me how,
*To adore* the Vast Unknown!—DARWIN.

Between species and species nature has drawn a line of separation, which time cannot change nor the sophistry of man obliterate. In our observations on the polity of nature, nothing is more calculated to arrest the attention of the naturalist than that immutable law of nature, which from the very commencement of organic existence, has impressed upon her productions *specific* characters; and which continues to maintain them in dispite of innumerable opposing causes.

The domestic dog (the proteus of carnivorous animals, which Pallas and some others believe to be a prolific hybrid,) has like a faithful slave followed the destinies of his master in every climate, has been subjected to every variety of food, education, and discipline, yet in no case has this animal so far departed from its original type as not to be easily recognised by the most indifferent observer; deformities and monsters are indeed to be met with, but in no instance has it given origin to a race resembling in specific characters the wolf, fox, jackall, or hyena, animals most nearly related to him in external form and internal structure.

When we contrast the *permanancy* of species with the *transitory* nature of individual existence, the reflexion cannot but prove mortifying and humiliating to the pride of man. In a state more or less perfect every individual of a species proceeds from the same permanent mould, among men some are destined to enlighten the world by the brilliancy of their conceptions, or to astonish by the magnitude of their geniuses;—some are consigned to perpetual slavery, or are the victims of sensuality, terminating with each day the purposes of their existence, and appear merely as the useless exuberances of human fecundity;—all without reserve submit to the law of transmutation; and men the most celebrated for intellectual pre-eminence, the wise, the

heroic, and the great, are hourly hurried into the oblivion of the tomb, with the slave, the vagrant, and the demoniac; and on the part of nature with the same apparent indifference. From this law even the productions of his ingenuity and power claim no exemption; and all the boasted monuments of human art, which appear to have been formed for posterity, "feel the tooth of time, and experience the rasure of oblivion." Persepolis and Palmyra, with their splendid porticoes, majestic temples, and gorgeous palaces, have long ceased to be,—and the "Land of Priam lives only in song." The serpent and the bramble creep over the dwelling places of kings.

*Time* is the genius of transmutation, into whose lethal circle are continually passing all created things. He waves his magic sceptre, and mountains of adamant are as the "dust of the balance;"—he nods his hoary head, and the self-reputed lord of the creation, like the 'clod of the valley,' is without perception, sense, or motion. He spreads his sable pinions, and our fondest recollections are shrouded in the mantle of oblivion. The Colossean statue—the sculptured bust—and the marble monument—crumble into the dust in commemoration of which they were constructed.

Amidst this wreck of matter, and metamorphosis of worlds, where shall we rest our desponding thoughts? The answer is clear and inevitable;—on *God and nature*, truth and reason;—divest the mind of prejudice, cultivate the understanding, and survey the works of the creation, when every object will declare in silent eloquence, that *God* only is immutable, and *nature* unchangeable.* As the thirsty traveller longs for the refreshing stream, so the soul fatigued with the labours of life, is glad to repose herself upon the peaceful bosom of nature. Instructed thus by the common destinies of all created beings, of our own instability, we should resign ourselves with perfect confidence into the hands of him who regulates the world, and con-

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* "Mighty nature bounds us from our birth,
The sun is in the heavens, and life on earth.
Flowers in the valley, splendour in the beam,
Health on the gale, and freshness in the stream."—Byron.

fine ourselves to the study of his immutable laws; which are equally revealed to us in the lightest atom which fluctuates in the meredian ray, or in the mighty confluence of worlds.

Such being the ordinary march of nature (which an impartial examination of her laws impels us to believe is really the case,) where shall we look for the proofs of the common origin, or successive and uninterrupted formation of living creatures?

If we now turn our regard towards the great truths unfolded by *geological science*, we shall at every step be met by additional arguments in favour of the position we have taken; we shall be convinced that the surface of the globe we inhabit has been subjected to many revolutions, immense in their extent, and tremendous in their consequences; all of which bear the most unquestionable evidence of the presence, foresight, and intelligence, of a *first great cause*, the Supreme Director of the Universe.

When we endeavour to penetrate the dark night of time, obscured by the dust of accumulated centuries, and reflect for a moment on the state of our globe anterior to the creation of all living beings, we wander into regions over which the torch of science sheds but a dim and feeble light, to render "darkness visible."

Of the interior of our globe we know nothing; the first three strata of primordial rocks,—granite, gneis, and mica-slate,—possess every appearance of having been held in a state of solution, and of having been deposited long before living nature had established her laws; whilst the ocean was a sterile empire, ere yet the monstrous whale had sported on its billows, and thousands of sparkling fish and shells were wanting to animate the fathomless depth.

When we wish to ascend to the causes of the formation of beings, positive facts, for the most part, are known to us only by their results, or by the inductions that we are enabled to draw from them; since we have no contemporaneous witness of these great events. It is not certainly by an accumulation of minute details, that we can expect to advance in the study of nature; they rather serve to surcharge it with a useless luxury: those great laws which have formed the universe are much more

worthy of our observation; we are but little benefitted by travelling incessantly in the same circle of knowledge, without endeavouring to escape from this terrestrial prison, without raising our regards towards the All-powerful arm which gives life and movement to matter. But from the abscence of much precise knowledge which we can never acquire, we are forced to recur to philosophical inductions, and to admit the most rational principles we may be enabled to discover by our thoughts; but besides that these inductions and principles become legitimate instruments of reason, when it is necessary to penetrate by means of meditation into the mysterious sanctuary of first Cause, there are no other means by which we can become acquainted with them; we have no other choice but to make use of them, if we wish to advance in the study of nature.

I trust I shall meet with indulgence in offering my feeble efforts to trace those mighty revolutions to which our earth has been subjected; remains of myriads of fossil animals, its former inhabitants, those archives of nature imprinted upon the rocks, and imbedded in the interior of mountains, offer to our inspection irrefragible proofs; the contemplation of which excites in our minds conceptions of the state of the primitive earth, such as we may have of the splendour of an ancient city, by wandering over its remains and viewing its fallen columns, its decaying monuments, and its buried edifices!

With this view let us divide the creation into several *distinct* though *arbitrary* periods. The first epoch produced the primitive monade, which have left no impression; 2d, The molusca nuda, and corrolines, together with multilocular shells; 3d, Univalve shells and *crustacea*, as trilobites and bilobites, &c. 4th, Bivalve shells, as terebratuli and producti, &c. all the above are peculiar to salt water formations, at least there does not appear any evidence of fresh water formations in the mineral kingdom, or in the impressions of the fossil remains which must necessarily have accompanied such formations.—At this early period of our planet, no mountains, hills and vallies, diversified its surface; entirely destitute of verdure, a savage sterility desolated its frightful solitudes; fields of flowers, and umbrageous forests existed not; nor did rivers and cataracts; their shores

enamelled with the violet and the amianthis, embellish the scene; the melodious organs of the feathered race had not yet been tuned to the praises of their Creator; the voice of the echo had not yet resounded to the bleating of the lamb. Nor harvest, nor grove, waved before the gentle zephyrs, with murmurs softer than the shepherd's lute. "All things are hushed, as nature's self were dead," nothing occurred to interrupt the deadly silence which every where prevailed, save the occasional roaring of the ocean, or the shrill whistling of the winds. The mind could wander only over naked plains, or immense empty deserts, where reigned sadness and dearth! exposed to the scorching rays of the sun, the earth rolled cheerlessly through the regions of infinity.

By the sacred historian the chaotic scene is depicted with primitive simplicity—"and the earth was without form and void, darkness was on the surface of the deep, *and the spirit of God* moved upon the face of the waters." The mind of man naturally recoils from the contemplation of the awful convulsions to which our planet is now subjected—"all the fountains of the great deep are broken up, the windows of heaven are opened," the volcano, the tornado, and the deluge, have commenced the work of regeneration;—fire, air and water, have conspired to interrupt the harmony of the universe, and threaten all things with anarchy and ruin; the earth to her very centre is shaken; its surface is broken up and dissolved, to enter again into new combinations—immense masses of primordial rocks are elevated into mountains from the depth of the ocean, carrying with them to their loftiest summits, the transition strata beneath which they were buried, and thus unfolding to our view, organic reliquæ of pre-existing worlds. The inhabitants of the deep are completely exterminated, but at length "a voice is heard from him who rides on the whirlwind, and directs the storm." The volcanoes cease their thunders; the winds are hushed, and the ocean retires. A new world appears, diversified with mountain, hill and dale; intersected with majestic rivers, which rush towards a common level; nor does the scene long remain mute and inanimate; the surface is soon clothed with verdure, and embellished with new vegetables and new

animals, with an organization which advances them in the scale of perfection.

We suppose this stage of the earth to constitute the most prominent epoch in the creation, characterised by the production of the floetz rock formations, or horizontal secondary stratifications, with their accompanying fossils; and by the formation of fresh water, and land animals, and vegetables.

Proceeding upwards, towards the present surface of the earth, we discover proofs of the many revolutions to which it has been successively subjected; always accompanied with greater or less changes in the nature of its animal and vegetable productions, relics of which are found more or less scattered among the fossil reliquiæ of *former* worlds—for it does not appear that every revolution has been attended with entire destruction of animal existence, on the contrary, some of these, as the *cornua ammonis*, for example, are found dispersed throughout various succeeding strata, and extending over a great portion of the globe. —But generally speaking, each general revolution forming extensive strata, has occasioned the destruction of most of the old, and formation of many new animals and vegetables; constituting new orders, genera and species;—each successive generation differing from that which precedes it, less and less in proportion as we advance towards the diluvial formation which covers many parts of the present earth's surface. No remains of fresh water, or land animals have been discovered previous to the early secondary formations—in which, as well as in the oolite and lias formations which succeed, we discover for the first time amphibious and land animals; one of the earliest is the Maestricht monitor of the mountain of St. Pierre, the bones of which occur in company with the teeth of sharks, gryphites, echinites, belemnites and ammonites. The strata above-mentioned, together with the calcareous schistus, furnish us with the remains of the ichthyosaurus, plesiosaurus, saurocephalous, megalosaurus, crocodiles, &c. advancing upwards to the gypsum formation, we are struck with the novelty of its fossil remains; we here, for the first time, meet with land mammiferous quadrupeds, viz. Palaeotherium, seven species.—Anoplotherium, five species, (these quadrupeds partake somewhat of the hog and

deer in their organization,) one species of sus, one of canis, one of vivera, one of didelphis, three or four sp. of birds, two sp. of reptiles, three or four of fishes: these animals are all found imbedded in the gypsum, which is covered over with a light layer of white marle, containing phytolithites, fragments of fishes, with specimens of limneus and planorbes, with other fresh water shells; the whole of which is covered with a marine formation, filled with sea-shells. It was most probably after the destruction of the animals above enumerated, that the earth was fitted to support the immense quadrupeds whose remains are discovered in the upper diluvian of the present surface of the earth; such as the mastodon, elephant, megatherium, megalonyx, rhinoceros, hippopotamus, &c. all extinct and mammoth species of animals. It would appear, indeed, that at this period nature delighted in the creation of gigantic beings. Thus fossil whales have been discovered measuring upwards of one huudred feet; sharks sixty or seventy feet; reptiles forty or fifty feet, &c. The same deluge of which we are speaking, doubtless destroyed and inhumed the denizens of those caverns, so successfully investigated by Professor Buckland (Reliq. Diluv.) among which were the hyena, tiger, bear, wolf, fox, weasle, horse, ox, deer, hare, rabbit, rat, mouse, raven, pigeon, lark, duck, and partridge. These fossils possessed appearances which rendered it certain, that they had lived and died in the same regions where they were discovered; as did also the Siberian elephant, which proves that the northern latitudes were then *warmer* than they are at present, which is further demonstrated by the fossil vegetables being all tropical.

The fossil bones of the rein-deer are discovered south of the Mediterranean; these animals do not now exist south of the Baltic sea; these latitudes were then at some period *colder*, as is testified by other well authenticated facts. No remains of man, or of those animals most nearly allied to him, as the monkey, bat, &c. of *human* art or invention; or of any animals of a similar species with those he has domesticated,* such as the sheep, hog,

* The horse excepted, according to the account of Professor Buckland.

dog, cat, ox, goat, &c. &c. have ever been discovered (fossil) in this or in any other situation; consequently it is probable, that the diluvian animals were destroyed anterior to the existence of man. Among these remains are found extinct genera and species; consequently it could not have been the flood of Noah, as we are informed that a specimen of every living being was preserved in the ark.*

It is clearly ascertained, says M. Cuvier, that the oviparous quadrupeds are found considerably earlier, or in more ancient strata, than those of the viviparous class. Thus, the crocodiles of Honfleur, and of England, are found immediately beneath the chalk.

"The great Saurien reptile, and the tortoises of Maestricht, are found in the chalk formation, but these are both marine animals. This earliest appearance of fossil bones seems to indicate that dry lands and fresh waters must have existed before the formation of the chalk strata. Yet neither at that early epoch, nor during the formation of the chalk strata, nor even for a long period afterwards, do we find any fossil remains of *mammiferous land* quadrupeds. We begin to find the bones of mammiferous sea-animals, namely, of the manati and of seals, in the coarse shell limestone, which immediately covers the chalk strata in the neighbourhood of Paris. But no bones of mammiferous land quadrupeds are to be found in that formation, and notwithstand-

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* As relates to the fossil mammifera, most of which were discovered by Cuvier, they form a series consisting of about seventy-nine species.—Nineteen of which have been found in the calcareous gypsum formation; twenty-one in other strata equally new; and none of which have been met with in formations anterior to the coarse shell limestone; thirty-nine present their remains in the most recent diluvial deposits, or nearly at the surface of the earth, and consequently appear the less ancient of those animals of which the species have become extinct. None of them belong to the orders bimana, and quadrumana; nor to the family cheiroptera; ten are related to the order carnivora, properly so called; one only belongs to the marsupial family; three are of the order *glires;* two of the edentata; fifty of the order pachydermata; ten of the ruminantia; and four at least belong to the cetacea. Those buried at the greatest depth, differ most widely from recent mammiferæ, and are sufficiently distinguished to form particular genera.

ing the most careful investigations, we have never been able to discover the slightest traces of this class, excepting in the formations which lie over the coarse limestone strata; but on reaching these more recent formations, the bones of land quadrupeds are discovered in great abundance. As it is reasonable to believe that shells and fish did not exist at the period of the formation of the primitive rocks, we are also led to conclude, that the oviparous quadrupeds began to exist along with the fishes, while the land quadrupeds did not begin to appear till long afterwards, and until the coarse shell limestone had been already deposited, which contains the greater part of our genera of shells, although of quite different species from those that are now found in a natural state. There is also a determinate order observable in the disposition of these bones with regard to each other, which indicates a very remarkable succession in the appearance of the different species. All the genera which are now unknown, as the palæotheria, anoplotheria, &c. with the localities of which we are thoroughly acquainted, are found in the most ancient of the formations of which we are now treating, or those which are placed directly over the coarse limestone strata. It is chiefly they which occupy the regular strata, which have been deposited from fresh waters or certain diluvial beds of very ancient formation, generally composed of sand and rounded pebbles.

"The most celebrated of the unknown species belonging to known genera nearly allied to those which are known, as the fossil elephant, rhinoceros, hippopotamus and mastodon, are never found with the more ancient genera, but are only contained in diluvial formations.

"Lastly, the bones of species, which are apparently the same with those that still exist alive, are never found except in the very light and *alluvial* depositions, and probably are not, strictly speaking, *fossil remains.*"

Such is the statement of M. Cuvier, formed on long and accurate observation of organic remains in their original positions, aided by the first museum of detached specimens in the world. Now to all this, it has been intimated: First, that the asserters of this hypothesis are *infiedels!* and secondly, that the hypothesis itself is gratuitous and unnecessary. To the first of these charges,

we shall only reply, that the puerile practice of calling names has long ceased to be considered a legitimate instrument in logic. When such individuals interfere in questions of science, it is always for the purpose of suppressing, not for *promoting* knowledge: truth is to the *moral*, what the sun is to the *physical* world; the glare of the former indeed, to the *bigoted*, is as insupportable, as was the refulgence of the sun to Milton's *fallen hero;* whose address to the glorious luminary is equally applicable to either.

> " O thou, that with surpassing glory crowned,
> Look'st from thy sole dominion like the God
> Of this new world; at whose sight all the stars
> Hide their diminished heads; to thee I call,
> But with no friendly voice, and add thy name
> O sun, to tell thee how I hate thy beams."—*Milton.*

To the second charge, we presume to say, that if an hypothesis is gratuitous and unnecessary, the phenomena to be accounted for may be explained without it. We will now, therefore, ask a few plain questions; our opponents will not deny the existence of organic animal remains in stratified bodies. They have indeed distinctly admitted the fact, but they are all to be accounted for by one great moral cause—the Noachian deluge.

Were then these strata of depositions formed during the convulsions of that short and perturbed period? most of them, on the contrary, bear indubitable marks of slow and uninterrupted operations both of mechanical and chemical causes; but if our opponents chose to limit the evidence of a deluge to the cracks and clefts which every where exist in the crust of the earth, it will necessarily follow that these strata with all the animal remains, which in regular succession are found imbedded within them, existed, and that too in a completely indurated state, before that event. We have therefore irrefragible proofs of a prior crust of the earth.

But, on the other hand, allowing the formation of these strata, and the fact that all the organized animal remains contained within them were really the effects of one single and contemporary cause,—the *Noachian deluge;* independently of the diffi-

culty of conceiving how strata could be formed under such circumstances at all, why have we not an universal jumble of quadrupeds, birds, reptiles, and every class of animals which could perish by means of water? Above all, why have we such multitudes of fossil fish; and why have we no relic of man, the single species on whose account, as our opponents agree, this tremendous visitation was sent upon the earth; and of which every individual perished, excepting eight persons? Besides, how does this hypothesis account for the extinction of so many genera and species? According to this system, pairs of each must have been taken into the ark—the mastodon, the megatherium, the palæotherium, &c. if then existing;—all, and every one of which must, therefore, respectively have survived the deluge. All are now extinct; and so long extinct, that there is not a hint in all the records of antiquity respecting their existence.

It has been a subject of dispute, whether the marine animals discovered on the summits of high mountains, were conveyed there by the ocean; or whether they were deposited in the situations they hold previous to the *elevation* of mountains; we shall not at present enter into this discussion; but merely state a fact less ambiguous than the discovery of sea-shells on situations so elevated, which is, that *land* animals have been deposited at very great altitudes. We are informed by Buckland, that the fossil remains of the horse, deer, and bear, have been discovered at the height of sixteen thousand feet, on the north of the snowy Kylas, one of the Hymalaya mountains, covered with gray calcareous sand; they had fallen with Avalanches.

Humboldt also discovered a species of mastodon on the Cordilleras, seventy-two thousand feet above the level of the sea, in the kingdom of Quito; another seventy-eight thousand feet at St. Fee de Bagota. We believe that sixteen thousand feet is an elevation much exceeding any to which fossil sea-shells have attained. At some period then, there has existed a cause which deranged the equilibrium of the earth, forcing it to roll on an axis different from the present one; thus far we are warranted by facts; it is unnecessary to speak here of the numerous theories which may emanate from them.

Reflecting on the various phenomena which the present in-

vestigation has led us to consider, the formation, destruction, and reproduction, of organized beings, we see no possible derogation from the general laws of nature; no such thing as a real miracle: monstrosities, anomilies of form, and all other deviations from nature, are connected with other general laws, which enter necessarily into the composition of the harmony of the universe; such are death, disease, and poisons, which viewed in relation to ourselves are considered as disorders of nature. O.

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ART. II.—*On the Uncertainty of the Signs of the Rupture of the Uterus.* By WM. CHURCH, M. D. of Pittsburgh. Read before the Pittsburgh Medical Society, May 2d, 1826.

WRITERS on midwifery have laid down certain symptoms, and which they tell us are pathognomonic of rupture of the uterus, which they have successively copied from each other. It is my intention in the present essay—First, to give the symptoms detailed by different European and American writers on obstetricks. Secondly, by an analysis of several well authenticated cases of rupture of the uterus, to prove that this unfortunate accident has taken place when none of those symptoms were present. Thirdly, detail two cases where most of the characteristic symptoms were present, and where rupture of that organ happily did not take place. And conclude by a few practical remarks.

We are informed by Dr. Denman that "the rupture of the uterus is accompanied by a sense of something giving way internally, *always* perceptible by the patient, and sometimes audible by the attendants, with sudden excruciating pain in some part of the abdomen, a receding of the part of the child which presented, with an instant vomiting of the contents of the stomach, or of a brown fluid, and an abatement or a total cessation of the pain, together with some degree of hemorrhage from the vagina."* Dr. Burns tells us "when this accident does happen, the woman feels something give way within her, and usually suffers at that time, an increase of the pain. The presentation disappears more or less speedily, unless the head have fully en-

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* Francis Denman, pp. 357-8.

tered the pelvis, or the uterus contract spasmodically on part of the child. The pains go off as soon as the child passes through the rent into the abdomen; or if the presentation be fixed in the pelvis they become irregular, and gradually decline. The passage of the child into the abdominal cavity is attended with a sensation of strong motion of the belly, and is sometimes productive of convulsions. The shape of the child can be felt pretty distinctly through the abdominal coverings." And that "the patient after this accident soon begins to vomit a dark coloured fluid, the countenance becomes ghastly, the pulse small and feeble, the breathing is oppressed, and frequently the patient cannot lie down."*

Dr. Ramsbotham states, "that rupture of the uterus always takes place suddenly, and generally without any previous warning—while the labour appears to be going on naturally but slowly, the woman is seized in the middle of a strong expulsive effort, with an uncommon pain in some part of the belly: this pain is of a very different nature from those pains of labour under which she has heretofore suffered; she has never felt the like in any preceding confinement. The attack of this new pain usually occasions a shriek, and is accompanied with the sensation of something having given way within: it is commonly followed by a sense of weight or oppression, and sometimes by the feel of the rising of her burthen. The patient now involuntarily puts her hand to her belly, with a complaint of increased suffering, and utters frequent exclamations expressive of misery.—This new pain is referred to one point, on one or other side of the uterine tumour, and it is stated to be similar to that which would be occasioned by cutting or tearing the parts asunder, and sometimes it is likened to the cramp. After its attack, the regularity of the labour pains is suspended, uterine action either ceases altogether, or is gradually diminished in energy and effect." That faintness, hemorrhage, coldness of the extremities, with tremulous quick pulse, restlessness, vomiting of greenish, or dark coloured fluids supervenes; and in some cases there

* James Burns, volume ii, page 118.

is a slight return of uterine action which is unavailing. And that "if the rupture takes place on the fore part or side of the uterus, some of the limbs of the child will be distinctly felt in a thin woman through the abdominal parietes by a hand pressing on the belly—the irregularity produced by such an occurrence will be sufficient to distinguish it from the uniform state of the uterine tumour in its entire state. But if the breach occur at the back part of the uterus, the escape of the child is not so distinctly perceptible by the hand unless the rent be considerable," and that the head unless it be firmly impacted in the pelvis recedes.*

It is unnecessary further to quote from European writers on this subject, suffice it to say, that Baudeloque, Smellie, and Merriman, concur without any material variation with the aforementioned writers. We will now attend to American writers, and hear what they say on this important subject.

Dr. Bard states that "the signs of this accident (rupture of the uterus) having occurred, are severe pain in a particular spot, suddenly rising to excess, and then as suddenly ceasing, with an immediate discharge of some blood, followed by faintness, cold sweats, and a feeble pulse, and a particular sensation at the moment, which discovers it to the woman, with the singular external appearance and fulness of the abdomen.†

Dr. Dewees, in his very valuable essay on rupture of the uterus, "after having remarked upon the uncertainty of any sign that is supposed to be the forerunner of the accident," tells us, "that when this accident happens it is almost always announced by very decided symptoms." And that, "for the most part the woman feels an acute pain at the part where the rent has happened—she generally shrieks out, and declares that something unusual has happened to her; the rupture is sometimes accompanied by a noise which is audible to the by-standers; a discharge of blood of greater or less extent is noticed from the vagina; her face becomes pale; her respiration is hurried; she becomes sick

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* Dewees' Rambsbotham, pp. 339, 40, 41, 42.

† Bard's Midwifery, page, 297.

at the stomach, and most frequently vomits; the matter discharged is sometimes only the common contents of the stomach, at other times very dark coloured, and even black; the pulse becomes extremely frequent, small, fluttering, or extinct; the woman complains of a mist before her eyes, loss of sight, and extreme faintness; and cold clammy sweat bedews the whole body, and convulsions and death follow if she be not speedily relieved."

He also informs us that "notwithstanding the very decided character the symptoms attending rupture of the uterus assume, they are not exclusively to be relied on."* For much valuable practical information on this subject, I refer to the essay which ought to be attentively studied by every practitioner of midwifery. It is in my opinion decidedly the best treatise on the subject I have seen.

Dr. Atlee of Philadelphia says, "the symptoms denoting a rupture to have taken place are principally these: The patient feels an acute pain in the part and suddenly cries out. Paleness and syncope supervene, the abdomen is changed in form according to the part of the fœtus which has been thrust into the cavity; cold sweats, vomitings, convulsions and death, close the scene. He further observes, "but sometimes, I presume very rarely, the symptoms are not so clearly indicative of the accident,"† and narrates a case illustrative of this remark: I will refer to this case hereafter.

Thus we learn that the most distinguished European and American writers on, and teachers of midwifery, agree in laying down very decided symptoms as characteristic of rupture of the uterus. We will now by citing several cases, some of which are reported by these self same writers, show that this accident occurred where none of the pathognomonic signs were present, and in other cases where the peculiar sensation of something having given way within the abdomen, which Dr. Denman tells us "*always*" accompanies this accident, was not felt, although

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* Essays on various subjects connected with Midwifery, pp. 242-3.

† Medical Recorder, volume vii. page 26.

some of the other signs were present. Yet Drs. Dewees and Atlee justly informs us that the signs of this accident are sometimes though seldom obscure.

The first case I will adduce is incidentally mentioned by Dr. Denman, who, after having detailed the symptoms of this accident, observes in the same paragraph; "but I have seen one case in which there was reason to believe that the woman walked a considerable distance, and lived several days after the uterus was ruptured, before her labour could be properly said to commence." He does not inform us how the case terminated. Now it is highly probable that if the very decided symptoms of this occurrence were present, the doctor, with his usual accuracy, would have mentioned them. I therefore infer that they were absent, for if the great prostration of strength, severe cramp, pain in the abdomen, vomiting, &c. which he tells us always accompanies the accident obtained, I am certain that the woman could not afterwards have "walked a considerable distance and lived several days," which expressions are by far too indefinite.

The second case is reported by Dr. John Sims, a very respectable physician of London. The patient, a well formed woman, mother of several children, seven months gone with child, after taking a very long walk under great agitation of mind, was, upon her return home, seized with uterine hemorrhage, which continued some days, and then gradually abated and did not afterwards return; but the woman continued very weak and ailing for two months, when, according to her reckoning, she had completed the full period of gestation. On the 11th of May, 1792, she was taken with labour pains, and sent for her midwife, who gave her expectations of a speedy delivery. But the pains going off she left her in the evening, with assurances that the child presented right, and every thing was in a safe way. Next morning finding herself very ill, but without labour pains, the patient sent for an experienced practitioner in the neighbourhood, who attended, and upon examination, found the mouth of the womb not sufficiently dilated to admit the finger; he could feel no membranes distended with water, nor any part of a child, either through the mouth of the womb, or through the parietes of

the womb itself. Her face was bloated, her legs and thighs œdematous, and her belly very large. From these circumstances he very rationally suspected that she was not with child, and directed his attention to the hydropic symptoms. But as she daily grew worse, Dr. Sims was desired to see her on the 16th of May, when he found her unable to lie down in bed, complaining of violent pains in her side; her respiration was short and frequent; her pulse extremely rapid, with some hardness in the stroke; a fœtid black discharge flowed from the vagina; her legs and thighs were much swollen and pitted upon pressure; the mouth of the womb was relaxed and a little open at the first entrance, just as it is frequently found in unimpregnated women, who have had several children; no part of a child could be felt through the parietes of the womb, nor could the enlargement of this organ be perceived. He was immediately convinced, that if the midwife had given a true account of the case, at the time she was first called, a *rupture of the uterus* had taken place and the child had escaped into the cavity of the abdomen. On examination of the belly externally, which was very large and hard to the feel, the tumour circumscribed as in pregnancy, but nothing like the extremities of a child could be felt through the teguments." After much severe suffering the woman died undelivered on the seventh of the next July, fifty-seven days after the rupture had happened. On dissection, in the anterior part of the cervixuteri next the bladder, was a rent through its substance, about three quarters of an inch in length, the sides of which were nearly contiguous, but ulcerated and not disposed to heal. The uterus was well contracted. Dr. Dewees very justly remarks on this case, "that it is not improbable that the rent might at first exceed six inches." And yet it is worthy of notice that five days after the accident had happened, the abdominal "tumour was circumscribed as in pregnancy, and that nothing like the extremities of a child could be felt through the teguments."*

The next case is by Mr. Charles Shitite, and is from the

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* Essays on the various subjects connected with Midwifery, by Wm. P. Dewees, M. D. &c. pp. 212, 13, 14, 15, 16.

Transactions of the Surgeons Apothecaries, (of where is not stated,) and is contained in the 7th volume of the Medical Recorder. Mr. Shillito entitles it "a case of *spontaneous* rupture of the uterus, in the seventh month of pregnancy. The woman was in her forty-third year, corpulent, but active, and had a capacious and well formed pelvis." "One evening, in the seventh month of her twelfth pregnancy, after more than usual exertion, symptoms of labour appeared; some trifling gushes of blood escaped, and the motions of the child were strongly felt. The os uteri was found rigid and admitting only the point of the finger."

No regular pains occurred until the following morning, when two very severe ones were experienced. The os uteri was a little more dilated, but still hard. The patient complained of a heavy weight and coldness in the abdomen, and general uneasiness. The third day was ushered in by a rigour followed by fever, intermitting pulse increased restlessness, acute pain in deeply breathing, and tenderness and tumefaction of the abdomen, which increased with the day, attended with delirium, furred tongue, and anxiety of countenance. These decided symptoms of uterine and peritoneal inflammation plainly indicated that the uterus had ruptured the day before, probably when the "two very severe pains were experienced." "Dr. Merriman, who was now consulted, passed two fingers through the os uteri, and discovered a rent in the posterior part of its cervix. The woman died on the twenty-fifth day after the rupture of the uterus, and on the twelfth after the delivery of the fœtus." On examination after death the uterus was found extensively ruptured, and "the left side of the os tincæ, of the cervix, and of part of the body of the uterus, appeared to have sloughed off. Mr. Shillito confesses he had no idea that the uterus was ruptured during the first forty hours of his patient's illness."

In the fourth volume of the Eclectic Repertory, Dr. Milton Antony reports the case of a negro slave, "who had the character of being very deceptious, and who complained on the 25th, 26th and 27th of March, 1814, of pains in her hypogastric region, with an internal hardness which she told her associates she could feel with her hand. Her pains were somewhat periodical,

resembling labour pains, accompanied with a sense of weight and oppression about the seat of the uterus; but as she denied the charge of pregnancy it was concluded she was deceptive and no farther notice was taken of her case."

"On the evening of the 26th she informed a woman with whom she associated that she believed she had miscarried, that she had some show which induced her in this belief. On the morning of the 27th, however, she arose and got breakfast, and in the course of the forenoon took to her bed again and made much complaint. A physician was called to see her, who, on entering the kitchen in the afternoon of the same day, to his utter astonishment found her dead;" and on examination the uterus was found extensively ruptured and the child had escaped into the cavity of the abdomen. "The cervix uteri and lower hemisphere of the uterus was in a schirrus state."

Dr. Chatard of Baltimore furnishes the next case, which is contained in the twelfth volume of the New-York Medical Repository. The subject of this case was a negro woman of small stature, advanced in years, and who had twelve years before borne a dead child. When the doctor was called to visit her she had been attended by an experienced midwife fifteen hours, who informed him, "that the membranes were broken before her arrival; that the head of the child was in the position in which she first found it; that the belly of the woman was harder, more elevated and more painful than she had ever observed it in any other parturient woman, that its anterior part, however, from the pubes to the navel, was remarkably soft though painful; that each of the labia pudendi was swelled to the size of the fist; that her pains were ineffectual though frequent; and finally, that he rpulse had been very weak from the commencement." On examination the doctor found the midwife's account to be correct. After many unsuccessful attempts he succeeded in bringing down the feet and delivering the body of the child; but unfortunately by pulling at the body to bring down the head, the head separated from the body and was left in the uterus, although the doctor says he used little force, as probably the child had been four days dead; for at that time "she was seized with a bilious vomiting, during which her belly had acquired its present

form; that it had ever since continued to be painful, nor had she since experienced the same sensations from the child as before." An unsuccessful attempt was now made to extract the head by the hand; next the crotchet was sent for. But when I put my hand, says Dr. C. "into the vagina, I found that the intestines had fallen into the vagina." The doctor by examination with his hand found the uterus very extensively ruptured. The woman died in a few hours afterwards. The body was not examined: the doctor thinks the womb was ruptured during the vomiting four days preceding labour, and conjectures that the softness felt at the anterior part from the pubes to the navel, was caused by the intestines sliding into this part. In this I concur, for the pain and tension of the abdomen, which came on soon after the vomiting, in my opinion, prove that then the accident happened. This peculiar feel and appearance of the belly, he thinks pathognomick of rupture of the uterus. The midwife who attended, and who had practised forty years, told him that she had observed this symptom joined with an elevated and hard belly, but twice during her long practice. Both of the women died and their children were extracted by the crotchet; one of the physicians suspected rupture of the uterus, but contented himself by saying it was decayed: the other, who is at once skilful and candid, did not suspect a rupture, nor should I have (says Dr. C.) suspected it, if I had at first succeeded by the forceps. Thus I believe this disastrous accident often occurs without the physician ever suspecting it. This case is very valuable in a practical point of view, for the symptom mentioned by Dr. Chatard as occuring in three cases I do not recollect to have seen enumerated by any systematic writers.

Another case exactly in point occurred in the practice of Dr. Stewart of Philadelphia, and is detailed by Dr. Dewees in his Essay on the Rupture of the Uterus. On the 14th of July, 1820, the membranes ruptured and the water was evacuated without any previous pain, nor did any supervene until the morning of the 17th, when about ten o'clock I was sent for, "when every thing appeared to promise a speedy and safe delivery." "About two o'clock the pains became quite severe," and Dr. S. who had previously taken his leave, was again sent for, and went im-

mediately; but before my arrival, says the doctor, "the pains had entirely ceased. The os uteri was now fully dilated and the cervix (vertex I presume is meant,) lower" than it was in the morning.

"Expecting every moment a recurrence of the pains, I waited for some time, but finding they did not come on, she was requested to walk about the room; and while walking, the form of the abdominal tumour was so particularly situated, that several females who were present remarked it; the tumour was less round, and more flat above and acute in front than usual.

Near an hour passed without any return of pain, during which time the pulse was nearly natural, and although she felt no regular pain, she complained of excessive uneasiness and distress. She died about ten o'clock on that evening, after the body of the child was delivered; and on examination next day the neck and body of the uterus were found ruptured," and the parietes of the uterus were preternaturally thin.

Dr. Dewees makes the following very judicious observations on this case, which, as they are equally applicable to the cases above referred to, I cannot help doing myself the pleasure of quoting. "This case is remarkable," says Dr. D. "first, in the entire absence of symptoms which would lead to a suspicion that a rupture was about to take place. Secondly, in the perfect freedom from those marks which distinguish this accident after it has taken place; for there was neither vomiting nor even sickness—no fainting nor disposition to it—no frequency of pulse nor hurried respiration. Thirdly, no particular event or expression decided the moment when the uterus gave way—no exclamation from sudden or acute pain, nor any noise to characterise the injury—no external hemorrhage—in a word, nothing to lead to the suspicion that a laceration had happened."—Thus far the doctor's observations are applicable to the cases above, and to the three next succeeding cases.

I will next advert to a case which occurred in my practice, which is published in the fifth volume of the Philadelphia Journal of the Medical and Physical Sciences.

"I was called to visit the subject of this case at five o'clock A. M. on the 23d of June, 1822. Her age was thirty-six years,

and she was in labour with her fifth child, and who was taken in labour on the day before at eleven o'clock in the morning. From that time she had been attended by a midwife who stated to me, that from the beginning she had regular labour, and that she had slept between the pains, and was as much composed as could be expected during the whole time—that the membranes had ruptured, and that the waters were discharged about an hour and a-half previous to my arrival—since when she had about four pains in rapid succession, and that she thought that six or eight more would have effected the delivery. On examination I found that the head of the child had descended low and was wedged in the pelvis.—The abdomen had in a great measure lost its globular form, and just above the pubes, on the right side, I could distinctly feel through its parietes, the child's elbow—I therefore apprehended a rupture of the cervix uteri. I inquired whether at the time the pains had left her she felt any thing break within her? or if she had experienced any unusnal feelings? Her answer was that she had not felt any thing break within her, nor any movement of the child, nor any unusual pain! And that she now felt only a little exhausted. She died undelivered on the morning of the 24th, about twenty hours after the occurrence,—and on dissection it was found that the child had completely escaped into the cavity of the abdomen, and the uterus was generally and extensively ruptured from the fundus to its connexion with the bladder and rectum. Its parietes were reduced from the ordinary thickness, to that of paper, and at the insertion of the fallapian tubes it was of a frail cob-web-like texture."

Dr. Atlee, of Philadelphia, while in Columbia in Lancaster county in this state, was called by a physician to visit one of his patients "whose case was very obscure, and who was dangerously ill." The physician informed Dr. Atlee that she had been about three days under his care, having one day previously sent for a midwife to attend her labour, which was then supposed to have commenced. He learned that after a few trivial pains "all signs of labour had ceased, and the patient, who expressed no unusual uterine sensations, became suddenly very weak, complained of difficulty of breathing, dysury and a painful dis-

tention of the abdomen."—Various means were used for her relief by three physicians, "who from the unsatisfactory history of her case, were all of opinion that the disease was inflammation either of the uterus or peritoneum, inferring from the slightness of her previous supposed labour pains that parturition had not commenced."

"I first," says Dr. Atlee, "passed my hand over the abdomen which was *uniformly* distended and painful on moderate pressure, then proceeded to a more particular examination. She complained of no pain as I advanced my fingers towards the uterus. I felt an apparent thickening and folding of the vagina, and obstruction to the passage of the finger, and with considerable difficulty reached the os tincæ, thrown in an obliquely transverse situation above the symphisis pubis, and elongated to a mere fissure."

"I gave it as my sentiment that rupture of the uterus had happened, founding my opinion on the folded state of the vaginal coat, the absence of heat in the parts, and the distortion of the os tincæ, all of which I apprehended were caused by the superincumbent pressure of the displaced child; the absence of heat contra-indicating inflammation of the womb. Dr. Atlee's views did not coincide with those of his professional brethren. A few hours after this examination she died; and on opening the abdomen the uterus was found contracted and emptied of all its contents, and had a wound nearly crucial, and now about two inches at the largest diameter, on the right side and midway towards the fundus."*

In the 10th volume of the Philadelphia Journal of the Medical and Physical Sciences, Dr. Braybs of South Carolina, reports a case of rupture of the uterus, in which none of the characteristic symptoms were present, and where this accident was not suspected. The doctor not being able to account for the woman's death very laudably had the body disinterred, and the uterus was found extremely ruptured.

These nine cases in my humble opinion incontrovertibly prove that rupture of the uterus often takes place, unaccompanied by

* Medical Recorder, volume vii. pp. 27–8.

any of the symptoms given as pathognomic by writers on Midwifery. True, there was a cessation of uterine action in these cases after the rupture had happened.

Dr. Ramsbotham, in his valuable work on Midwifery, relates nine cases of rupture of the uterus, each of which presenting something different, and each occurring under different circumstances, where some of the signs were present, but in no case did the woman complain of something having given way within her abdomen. The cases are interesting and instructive.

Dr. Gazzam of Pittsburgh details a case of rupture of the uterus where this symptom was absent, and makes some very judicious observations on the fallacy of relying on the symptoms of systematic writers.*

In the nineteen cases above referred to, the symptom of something having given way within the belly of the woman was not present; although Dr. Denman and others tell us that the accident is always accompanied by it! What reliance, I ask, can we therefore place on any sign, or signs given by them? This symptom one would reasonably suppose from the nature of the accident should be present in every case. Perhaps the thinness of the uterus in Drs. Stewart's and Church's cases may account for the absence of the symptom in these cases. Dr. Denman tells us that "the uterus may be worn through mechanically, in long and severe labours, by pressure and attrition, between the head of the child, and the projecting bones in a distorted pelvis, especially if they be drawn into a point or a sharp edge."† Perhaps this may account for the absence of this symptom in some of these cases.

I will now relate two cases wherein some of the symptoms of rupture of the uterus were present, and where this dreadful accident happily did not take place.

Case first, on the 15th of August, 1823, I was called to attend Mrs. G——, of St. Clare township, Alleghany county, aged thirty-eight years, in labour with her eighth child. On my arrival at eight o'clock, A. M. I was told that she had been in re-

* Western Quarterly Reporter, volume ii. page 302.

† Francis Denman, page 337.

gular but slow labour for twelve hours, and that the membranes had ruptured, and the waters were discharged at about day-break that morning. The os uteri was considerably dilated: the presentation was natural. As the bowels were in a constipated state a dose of salts was given, which soon operated well. The pulse being full and frequent, and as there was some rigidity of the external parts, a pint of blood was taken from the arm. The bladder was regularly evacuated, and every thing indicated a safe delivery in the course of the day, The pains increased in force and frequency, and became very severe and expulsive after the middle of the day. At three, P. M. when I expected that four or five pains would have expelled the child, during a violent expulsive effort, she suddenly exclaimed, "Oh doctor, the cramp,"* and immediately the pain went off. She became very restless, uterine action ceased, sickness of the stomach, with faintness, came on. The head of the child, which was resting on the perineum, did not recede. The new pain she said was of a very severe cramp kind, different from any pain she had experienced in any former confinement, which extended from the left side of the umbilicus where it had commenced over the abdomen. She repeatedly declared that the pain would kill her if not soon relieved. Having before seen two cases of rupture of the uterus, where none of the decided symptoms were present, I now apprehended that this dreadful accident had happened. I gave my patient sixty drops of laudanum, had embrocations of warm oil and laudanum constantly made over the abdomen, and kept her mind and body as tranquil as possible. About half past four uterine action returned, and in about another hour she was delivered of a living child. The placenta soon followed; and she had a good recovery. She has since borne a living child. Nothing unusual happened during her last labour.

Case second.—One afternoon in the month of July, 1824, I was called to visit a stout well formed negro woman, aged thirty years, in labour with her second child, and requested to deliver her with instruments; she had been forty-eight hours in

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* It is worthy of notice that Mr. Golden's patient uttered a similar exclamation when her uterus ruptured. James Burns, vol. ii. p. 116.

labour, and the waters were discharged about twenty-four hours. The pains, which were very severe during the last night, had ceased about three hours before my arrival; soon after she had been seized with a severe cramp pain in her belly; sickness at the stomach and vomiting. She was restless and impatient, complained of a very severe cramp pain in her abdomen, different from labour pain, and headach. The child's head was low in the pelvis, and there was a considerable discharge of an orange coloured fluid from the vagina. The abdomen had a peculiarly hard and rather an irregular feel; it had in some degree lost its globular form This was probably caused by the waters having been so long discharged, and the irregular contraction of the womb on the child. The rectum was loaded with hardened fæces. Her countenance indicated great distress. The pulse was quick and rather tense, which induced me to take a pint of blood from her arm; the bleeding relieved the pain in her head. I ordered the midwife to administer a purgative glyster immediately, and to rub the abdomen constantly with warm oil and laudanum. The clyster operated well and completely emptied the rectum. After an hour the uterus began to act a little, to increase this action I gave a drachm of ergot in decoction in divided doses, and in about another hour she was delivered of a large dead child which appeared as if it had been dead for two or three days. The placenta soon followed. She had a slow recovery, but eventually got well.

In these two cases the symptoms of a rupture of the uterus having happened, were much more decided than they were in the nine first cases quoted above, and equally if not more as characteristic of the accident than they were in the last ten cases referred to. Whether the method of treatment adopted had any agency in preventing a rupture from taking place I cannot determine. Indeed I apprehended that this disastrous accident had happened in both cases.

In the first case there was the sudden severe cramp pain in the abdomen, restlessness, faintness, sickness at the stomach, cessation of uterine action, and the exclamation that something dreadful had happened, and that she never felt the like distress in any of her previous confinements, although she had borne

seven children. In the second case there was a severe cramp pain in the abdomen, restlessness, sickness at the stomach, vomiting, cessation of uterine action, hemorrhage, and great general distress, with a peculiar appearance of the abdomen.

I respectfully dissent from Mr. Shillito when he informs us "that these accidents are however happily rare,"* and concur with Dr. Dewees when he observes, "that there is great reason to believe that the uterus is ruptured during parturition much more frequently than is commonly supposed;"† because many practioners, the pathognomonic symptoms of rupture of the uterus given by writers on midwifery being wanting, instead of inquiring into the causes of their patient's death, content themselves by referring the fatal event to something inexplicable in the case; while others still more worthy of blame, although they know that this accident has happened, follow Smellie's very erroneous advice and say nothing about the matter.‡ The accoucheur should in every case, if possible, correctly ascertain the cause of his patient's death, and if the case presents any thing peculiar, lay it before the profession. As this accident was at one time taught to be absolutely and necessarily fatal by Dr. Wm. Hunter and others, then at the head of this branch of the profession, and as this opinion has been proven to be entirely erroneous, by cases of recovery from this accident occuring in the practice of Drs. Douglass, Hamilton, Hugo, and others; and also as all human knowledge is progressive, perhaps by adopting the mode of procedure above advised in all cases of death during the time of, or soon after parturition, some premonitory symptoms may yet be discovered, and a plan of treatment hence adopted which may sometimes fortunately prevent the uterus from rupturing.

It is the unquestioned duty of the accoucheur in every case to inquire into the state of the bowels and bladder, and cause them to be regularly evacuated; to bleed according to the state of the pulse, and the circumstances attending the labour; and if the labour is lingering and the woman thereby exhausted; or if the

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* Medical Recorder, volume vii. page 577.

† Dewees' Essay, page 201.

‡ Ibid, page 202.

pains are of a spasmodic, or erratic kind, give an anodyne; or should she complain of a peculiar cramp pain in the abdomen different from labour pains, frictions with warm oil and laudanum constantly made over the belly will be decidedly serviceable. And if a rupture of the uterus be suspected to have happened, for the method of detecting it, and the consequent mode of treating, it I refer to Dr. Dewees' very valuable essay on the rupture of the uterus, which contains an excellent epitome of all that is known on this important subject.

Erratum.—For Mr. Charles Shitite, in page 180 of this Article, read Mr. Charles Shillito.

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Art. III.—*A case of Tracheotomy for the removal of a Foreign Substance from the Trachea.* By John Atlee, M. D. of Lancaster, Pennsylvania.

On Wednesday noon, August 11th, I was consulted by a son of Mr. Dinsmore, aged ten, who had that morning while running put a button-mole into his mouth, which, during respiration, was drawn into the trachea. He complained of uneasiness during respiration, attended with a very slight rattling, and pointed to the depression at the upper part of the sternum as the situation of the mole. He informed me that he had swallowed bread, and many other articles recommended to him without effect. Upon requesting him to cough a rattling was heard, and soon after a sudden check to expiration denoted the lodgement of the button against the lower surface of the glottis, which required a sudden and violent effort of inspiration to remove the sense of suffocation. Being an intelligent boy I explained to him the nature of the case and the difficulty of dislodgement without an operation, and told him to inform his parents. I gave him an emetic, with the hope that the violent efforts at expiration produced by it might throw the mole through the rima glottidis. Next morning I was sent for by his mother, who told me that during the night he had two or three severe spells of coughing, which almost amounted to suffocation, with very great anxiety and alarm. These were relieved by placing him in an upright position and keeping him so until morning. After explaining to her, the father being absent, the nature of

the accident, the improbability of its removal through the natural passages, the danger of delay producing great irritation, inflamation and its consequences, the safety and almost certainty of success from an operation both she and the boy expressed their willingness to submit to any mode of relief I thought proper to use. Feeling desirous to have my opinion confirmed by a gentleman of more experience than myself, I requested Dr. Humes to examine the child and to give his opinion to the parents. Being much engaged we could not meet until the following evening, when after a close examination, my opinion of the situation of the mole and the necessity of an operation, was confirmed, and the next morning at eleven o'clock was fixed upon for operating. I left a dose of cathartic pills to be taken at bed-time, which operated very well during the night. Having given an opium pill about ten o'clock to tranquillize the system, and ease the cough if possible, the patient was placed upon a dining-table, with his head bent over the edge and held firmly by an assistant. An incision was made through the integuments about an inch and a-half long, extending downwards from above the cericoid cartilage. The sterno-hyoid and thyroid muscles were then separated and exposed the inferior thyroid veins lying upon the trachea and passing down to the transverse vein. After exposing the trachea, a sharp pointed bistoury was passed through it about the third ring, and extended downwards about three quarters of an inch. From the symptoms previous to the operation, I concluded that the mole must lie upon the bifurcation of the trachea, its diameter (nearly half an inch) being too great to admit its entrance into the bronchiæ, and I depended more upon the expulsive power of the lungs, than the use of forceps. Holding open the orifice of the wound, I requested him to cough, this he did several times violently but in vain. Suspecting that it might have passed through the chink and swallowed during the alarm of the operation, I shut up the trachea and the wound and told him to cough again, the mole was immediately thrown up against the chordæ vocales and he exclaimed, "it is there yet." Being satisfied as to its presence I passed a probe through the wound as far as the bifurcation without feeling the mole, but the probe caused a violent effort to cough, when the probe was withdrawn and immediately after it the mole was thrown

through the wound several feet from me. The wound was closed by two interrupted sutures and adhesive strips, and the boy relieved of all his uneasy sensations, was put to bed. Seven o'clock P. M. was sent for and informed by the mother, that about two hours previously the boy had a violent fit of coughing with a sense of suffocation which continued some time;—that he threw up a little phlegm and was relieved. He told me that there was something in his throat which he could not get up and which almost choaked him. Upon requesting him to expectorate and cough I perceived that the air was in violent expiration forced into the wound and occasioned a disagreeable sensation which prevented further attempts at expectoration.—I requested him to cough slowly and gradually to get up the phlegm, which he did readily. It was slightly discoloured with blood. I gave him some pectoral mixture with directions to take a table-spoonful every four hours when troubled with cough, and to sit in a half upright position during the night.

15th. Found my patient doing very well;—slept soundly all night with little or no cough;—no air passing out through the wound, nor has any passed except yesterday, when coughing violently. Complained of soreness in the trachea opposite the upper end of the sternum, which I attributed to the irritation excited by the button-mole. Desired him to be kept quiet and to abstain from all stimulating food. Permitted him to have mush and milk.

16th. Patient doing well, but had a bad night owing to his having eaten too much mush and milk;—had had fever and rested badly;—no cough, nor difficulty of breathing, but some soreness in the upper part of the chest; gave him four cathartic pills;—evening;—pills operated well, and patient feels much better;—no medicine necessary;—wound looks as if union by the first intention had taken place in every part except the lowest half inch.

17th. Patient slept well, is very lively and complains of nothing but the soreness of the wound;—soreness of the chest is relieved. Continues gradually to mend, and by the 24th the wound was entirely healed.

The fortunate termination of the case related above tends to prove the safety of an operation, the want of which in many in-

stances has caused the death either immediately or protracted of many an interesting child.

The facility with which, in most instances, it may be accomplished, ought to be an inducement never to hesitate or delay in similar circumstances. The irritation, which had already commenced, would inevitably have produced inflammation and suppuration, which extending to the minute ramifications of the bronchia must have caused an incurable disease so long as the offending substance remained in the trachea. An operation performed at a late period might have terminated successfully; but the chance of success must have been lessened in proportion to the extent of the irritation and inflammation of the mucous tissue of the lungs. It is therefore, I think, most advisable, especially as the frequency and the success of the operation is demonstrated to us by the cases reported by Drs. Jamison, Annan, and others, in this country, to operate in all cases where immediate death or protracted suffering is likely to follow the accidental introduction of foreign bodies into the trachea.

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ART. IV.—*An Inaugural Dissertation on the properties of the Apocynum Cannabinum, (Indian Hemp;) submitted to the Trustees, President, and Medical Faculty of Jerfferson College.* By M. L. KNAPP, Licentiate of the Chenango Co. Medical Society, N. Y.

APOCYNUM is the name of a genus of plants. It is derived from the Greek, απο and κυων a dog, dog's-bane, or poison for dogs: also called Hippomanes, from ἱππος a horse, and μαινομαι to be mad, because the plants were supposed to produce madness in horses.

We have but three species arranged under this genus. Michaux* has described only two, the Androssæmifolium, and the Cannabinum. Pursh† and Barton‡ describe a third, calling it Hypericifolium, and Nuttall§ says that there are other species,

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* Flora Boreali Americani, tom. 1. p. 122.

† Pursh's Flora Americæ, V. 1. p. 179.

‡ Vide Barton's Flora Philadelphiacæ, Vol. 1. p. 130.

§ "Of this genus there are several other species in South America, India, and the Cape of Good Hope, and one species A. *venetum*, said to be indige-

indigenous to southern climates, but he has not identified their characters. The first of these species has received the attention of Dr. Bigelow, of Boston, and will be found treated of in his valuable work, entitled "Medical Botany."* The Cannabinum is the subject of this essay. The facilities which offered for examining its properties, were, access to the labaratory of this institution, and an attendance on out-door patients of the Infirmary.

*Botanical Description.*—The plant, then, under consideration, is the second species of the genus Apocynum, class Pentandria, order Digynia; natural order Contortæ Linnæi.

The characteristics of the genus are the following.

*Calyx*, very small, five-cleft, persistent. *Corolla*, campanulate, half five-cleft, lobes revolute, furnished at the base with 5 dentoid glands alternating with the stamina. *Anthers*, connivent, saggitate, cohering to the stigma by the middle. *R. Brown.*

*Style*, obsolete; *Stigma*, thick and acute; *Follicles*, long and linear; *Seed*, comose. *Nuttall.*

The first and second species resemble each other so much, that a careless observer might easily mistake one for the other. I have therefore given the description of both, that the specific difference may be the more apparent.

1. Apocynum Androssæmifolium. *Leaves*, ovate, glabrous; *Cymes*, terminal and lateral; tube of the corolla longer than the calix. *Brown.*

*Common Dog's-bane, Tutsan-leaved Dog's-Bane.* From two to three feet high. Flowers, pale red and striped. On the borders of cultivated fields, frequent. Perennial. July. *Barton.*

2. Apocynum Cannabinum. *Stem*, upright; *Leaves*, oblong-oval, with hoary pubescence underneath; *Panicle*, pubescent; the limb of the corolla erect. *Willd. and Pursh.*

*Indian Hemp.* Resembles No. 1, easily distinguished, however, by the leaves and flowers, which are greenish white, or yellowish green, and smaller than those of No. 1. In similar places with the preceding. Perennial. June, July. *Barton.*

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nous to the islands of the Adriatic."—*Genera of North American Plants.* Vol. i. p. 162.

* Vide Vol. ii. p. 148.

This description assigns to it its proper place, and identifies its characters sufficiently well for all botanical purposes, but in connexion with this general treatise, and from personal observation, I shall add some further remarks on its habitude.

It belongs to the natural family Asclepiadeæ or Apocyneæ, every part of the plant when wounded, emitting copiously a milky, agglutinating juice.

It grows common, I believe, in every section of the United States, and will generally be found in the neighbourhood of water-courses, along ditches, borders of woods and cultivated fields; flourishing best where some agricultural operations have disturbed the soil. I have found it frequent in Jersey, on the borders of stubble fields, particularly in the vicinity of Cooper's creek.

It will mostly be found springing up singly, or from beside the old stalk of last year, with a stem erect, round, smooth, of a third of an inch in diameter, and pithy, and attains to the height of from two to four feet. It is of a yellowish green colour in the shade, but exposed to the sun, of a beautiful carmine red. The branches are also of a lively red colour, and together with the leaves are disposed in opposites.

The flowers appear in panicles situated on the summit, and the inner sexual parts being higher coloured than the corolla, the clusters assume a pink or purplish hue. The flowers are said to possess the singular property of catching flies, which is ascribed by Dr. Darwin* to irritability. Mr. Curtis† however says that it is owing to this mechanical reason, viz: that in consequence of the convergency of the anthers, and their adhesion to the top of the stigma, a narrow fissure exists, which becomes more contracted at the top. The proboscis of the insect being inserted into this cavity in search for the nectary, in withdrawing, gets caught, and the efforts of the insect to rescue itself only serve to fix it more securely. In this situation mosquitoes, gnats, and small flies are frequently found dead. The clusters of fruit hang in pairs of terete, linear-lanceolate follicles or pods, from three to six inches in length, and of the size of a crow quill;

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* Bot. Gard. part 2. p. 182.

† Bot. Mag. t. 280.

APOCYNUM CANNABINUM.

containing numerous imbricated seeds lying upon a small central rachis, or receptacle, and crowned with a long pappus, or down.

The root is horizontal, of the size of the stem, and extends in opposite directions, frequently to the distance of five or six feet, either way, with few or no collateral branches; often, however, sending up two or three stems in its course, and terminates rather abruptly in a few spreading branches. It is made up of the ordinary parts of a perfect root, viz: epidermis, cortex, liber, lignum, and medulla, and sends off numerous fibrillæ for bringing in nourishment. It appears superabundant, or disproportioned in quantity to the rest of the plant, and may be reckoned a proper caudex or receptacle, for the elaboration, no doubt, of important medicinal juices. From twelve stalks of ordinary size, I obtained a pound of the root.

Its sensible properties are the following: It bleeds freely if wounded, and the concrete juice exhibits the properties of gum elastic. It has a strong odour, and a nauseous, sub-acrid, lasting bitter taste. The colour of the young roots is similar to that of the Irish potatoe, but the old roots are of a dark chesnut colour, approaching to black. It loses 45.8 parts in a hundred by drying, fractures transversely in its cortical portion, shrivels, and assumes a darker colour. When fully dried it is extremely spalt, breaks short, and is easily reduced to powder, in which state it very much resembles ipecacuanha.

*Its utility as applied to the Arts.*—Into a strong decoction of the tops of the Apocynum Cannabinum were immersed separate rags of linen, cotton, and flannel, after having been dipped in a mordant of alum. The linen and muslin were dyed a fustic yellow, and so fixed, that repeated washings with soap and water did not in the least fade them, but on the contrary, deepened the colour. The flannel was little altered. The dye was rendered of a deep rhubarb colour, and on boiling deposited a copious yellow precipitate. With a mordant of coperas the dye became black, and the colouring matter was precipitated most abundantly into the texture of the flannel, which took a tolerable black, and was permanent. By boiling down this dye, an excellent, black, and durable ink was prepared. With alum and

soda a cinnamon colour was produced. The nitro-muriate of tin (the proper mordant for scarlet,) produced a fawn coloured precipitate of all the extractive and colouring principles, and left a supernatent almost colourless fluid above. This precipitate was insoluble either in water or alcohol.

Hence we may infer that the plant contains tannin in considerable quantity, from the fact that black was produced on adding an iron base; the peculiar principle also, called extractive, from the copious precipitate that ensued on adding a salt of tin, those salts being the proper tests* of extractive; and that the colouring matter is adjective† and not substantive, from its residing in the extractive portions soluble in water, and requiring only a change of mordant to produce a different colour.

From the circumstance that the colour was rendered deeper by the alkaline principle of the soap, the idea occurred to me, whether the colouring matter might not be combined with the fecula of the plant, as in the Rocou of the American tree *Uruca*, the Archil of the *Lichen Parellus*, L. of Auvergne, and the Indigo of the *Indigofera tinctoria*, L. of St. Domingo, with some others; alkali or lime being the proper mordant to precipitate these colours, and hot water a solvent of fecula. Inasmuch, however, as these are substantive colouring drugs, the analogy cannot be maintained.

A fact of some importance is, therefore, deducible from the above experiments; that, indeed, on which the utility of this plant as a colouring material alone depends; viz. that the energy of the affinities of its colouring matter, both for the stuffs and bases applied to them, is such as to produce a permanent colour. The effect of the dye upon the different stuffs used as above, afford an example of the force of these natural affinities; wool, according to Bancroft,* having a stronger affinity for the metalic bases than any other known material.

Before I dismiss this part of my subject I beg leave to notice another, perhaps more useful property, this plant possesses, in

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* Vide Thompson's Chemistry, volume iv. page 55.

† Vide Bancroft on Colours, volume i. page 341.

* Vide Bancroft on Colours, volume i. page 345.

relation to the purposes of the arts. I mean its hemp-like quality; and in illustration of which, I can advance nothing so appropriate as a quotation from the paper of E. C. Genet, Esq. "On the economical utility of the Apocynum Cannabinum and Asclepias Syriaca, natives of the state of New York, communicated to the society for the promotion of useful arts in 1810."*

After mentioning its near relation to the asclepias and that all are indiscriminately called by the farmers, silk, cotton or milk-weed, he thus proceeds: "Leaving for the investigation of the chemists the medicinal qualities of the roots and juices of these plants, I shall consider only the economical benefits that might result from their cultivation.

"The apocynum or Indian hemp grows profusely on our low lands. Its blossoms like those of the silk-weed are purple, and the pods also contain a quantity of silk, though less than the silk-weed. But the coat of its stem is far superior in strength to the hemp.

"I caused to be water-rotted a considerable quantity in 1804, and obtained an excellent hemp as white as snow, remarkable for its strength, which proved to be double to that of common hemp.

"I have been informed that the Indians called Mowhicans, who formerly inhabited the land where my plantation is situated at Greenbush, on the east bank of the Hudson river, below Albany, made a great use of this plant, and not many years ago were still in the habit of coming from the distant place where they now dwell to collect it. Several of my oldest neighbours have assured me, that the ropes and yarn which they made from the fibres of that plant, were far superior for strength and durability, to those made of flax and hemp.

"That sort of apocynum being perennial could be cultivated and multiplied to the greatest advantage, and being more natural to low and overflowed lands, could render profitable certain pieces of ground which are now totally unproductive.

"The apocynum cannabinum in its natural state, is lower than the silk-weed, but cultivated it would probably grow larger and liberally reward the attention paid to its improvement."

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* See Transactions of the Society, &c. volume iii. page 153.

*Medicinal Qualities.*—Case 1st. August 7th, 1825. Martha P. an aged lady in Kensington. Dropsical affusions following intermittent fever. After an alterative bleeding and some opening medicine, she took for three days an infusion of the galium aparine, which produced copious diaphoresis, and had some effect upon the unrinary organs. I then ordered blisters to the ancles, and gave her pills of gr. iii. each of the extr. apocynum cannabinum, one to be taken three times a day; and from her wonted diet of ham, salt mackarel, &c. with the leguminous garden vegetables, restricted her to a farinaceous diet and the light meats.

On the 13th, her urgent symptoms were meliorated. Pills had proved cathartic, also excited nausea but not vomiting. On the 15th, the anasarca was evidently diminished, but as she complained of load at the pit of the stomach, costiveness and sickness in the morning, I ordered her gr. xv. of the powdered root to be taken in the morning fasting, directing her if it vomited to drink freely of warm water, and if it purged to take plentifully of oat-meal gruel.

It operated as a prompt and efficient emetic, brought off much bilious matter from the stomach, and also proved cathartic. The anasarca of the feet and ancles, and the bloating of the abdomen which had excited much alarm in the patient's mind, were from this time found to be daily diminishing. The use of the pills as above mentioned was continued, and strict regard paid to diet.

On the 25th from being unable to go out at all, she was so far restored as to be able to visit the infirmary, when she declared herself in better health than she had been for six months. As a preventive of costiveness she was ordered the following pills:

℞. Pulv. Apocyn. Cannabin, ʒi.
Aloes Soc. - - ʒss.
Ol. Cinn. - - gtt. iij.
Sapo Cast. - - gr. xx.
Mucilage Gm. Acac. q. s. M. f. pill xxx.
S. One to be taken morning and evening.

*Aug. 14th. Case 2d.*—Charles A. aged twenty-five years, shoe maker, Arch-street. Intermittent fever. Commenced in April last, had been treated with emetics, cathartics, &c. followed by the bark, which had interrupted the paroxysms, but on discon-

tinuing the bark, had now returned. Complexion very sallow. I ordered him two powders, gr. xv each, of the apocynum cannabinum, one to be taken that evening, and the other on the following day, an hour previous to the expected paroxysm. The effect of the first was that of a salutary emetic; no cathartic effect. The day following, agreeably to his directions, he took the other powder. In half an hour, felt the precursory sensations of coldness, yawning, lassitude, numbness, &c. The medicine soon took effect, vomited him freely, and so restored the balance of the circulation as to remove all sensations of the approaching chill. The symptoms at length returning, vomiting again subdued them, and so for several times successively; to use his own language, "it broke the fit." The stages, which before had been very distinct, were on this occasion but imperfectly developed; general perspiration and quiet sleep soon followed.

Two days after this, a change of weather occurred, in which the thermometer sunk from ninety to sixty-eight degrees, with cold northeast wind and rain, yet the paroxysms did not recur until the end of two weeks; when they again appeared and the liquor arsenicalis was had recourse to, which effected a cure. In the interim however, I gave him small doses of the apocynum, such as the stomach would bear, combined with opium and nitrate of potash in the form of Dover's powder. Whether this preparation had any effect in preventing the sooner return of the paroxysms I will not pretend to say: probably however, had the ipecacuanha been administered throughout, in its stead, the result would have been similar.

Convinced by these exhibitions of the plant, that it possessed at least virtues in common with other emetics, I next determined to see by a trial of its powers upon my own system, whether any thing peculiar attended its operation. Accordingly, Aug. 20th, I weighed out two powders of gr. xv. each, mixed one with a tea-cup-ful of warm water, and commenced taking it in the morning at a-quarter before twelve, fasting: in usual health, pulse seventy.

I began with two table-spoonfuls; in fifteen minutes felt a slight nausea, took two spoonfuls more, and in another fifteen minutes took the remainder, which provoked efforts to vomit.

After fifteen minutes more had elapsed I mixed and took the other powder, with a difficulty however unpleasant to reflect on. At one o'clock I vomited slightly, felt weak and sleepy, and went to bed. Drinking warm water would then doubtless have provoked full vomiting, but I chose to wait the effects of the medicine alone. After getting quiet in bed, I examined my pulse, and found it fifty strokes to the minute.

I had some headach, felt bewildered, drowsed, and fell asleep. I slept for more than an hour; was then awakened with extreme sickness followed by two spells of full vomiting, in the interim of which I examined my pulse and found it forty-five to the minute. About a quart of fluids together with the powder and some bilious matter were thrown off. I felt the stimulus of it passing onward into the intestines, and judged that it would also prove cathartic; which it did on the following morning in a gentle way, without any griping, and kept the bowels in a soluble condition for a day or two. While under its immediate effects I noticed a very considerable increased secretion of mucous and saliva from the mouth and fauces, which kept me constantly spitting, and also an augmentation in the secretion of urine. Upon the whole, relative to its operation, although it produced a very great diminution in the frequency of the pulse, yet it occasioned none of that death-like prostration I have always experienced on taking the tartar emetic, and although its bitter sub-acrid taste is very persistent in the fauces, yet I think it no more disagreeable to take than the ipecacuanha, while at the same time it operates as effectually as either. It will however, perhaps, be objected to on account of the tardiness of its operation: on this score it requires further trial, and in larger doses, before determining. Relative to myself, I can remark, however, that I have been obliged to take as many as sixty grains of ipecacuanha, with a less speedy, and less efficient operation than I experienced from this potion. I never to my recollection took an emetic that had so tranquillizing an effect, operated so fully, and at the same time produced so little debility. Its operation in my case would at least suggest an inquiry into its properties, whether it may not unite an anodyne principle with its emetic qualities?

*Case 4th.*—The result of this case gave me very considerable

confidence in the remediate powers of the apocynum when applied to that form of bowel affection so common among children during the hot season, and known by the name of *summer complaint.* The little patient to whose case I allude is the son of Mr. J. W. living in Cypress Alley, and aged two and a-half years. He was subject to frequent attacks of croup, for two of which I treated him during the spring and early part of summer, and in both of which instances, but especially in the last, I was obliged to use prompt and copious depletion by the lancet, followed by the application of leeches and blisters to the thorax, inasmuch as the inflammation was extended to the bronchiæ and seemed to threaten a speedy effusion. Antimonials, calomel and the warm bath were likewise resorted to. I speak of this only in relation to that state of debility which ensued, and particularly that of the digestive functions, which seemed the connecting link in the chain of morbid affections between his inflammatory attack and that obstinate derangement of bowels that ensued, above alluded to.

It commenced during the convalescent state of the child, in the fore part of the month of July, and was not subdued until September. Considerable febrile action was generally present, as manifested by the irritated pulse, parched skin, and constant thirst. The nature and quantity of the discharges from the bowels were very variable, passing through all the shades from a dark green or muddy appearance, to that of a light clay colour; sometimes more copious than at others, but always more than natural. I had during the course of some three or four weeks prescribed most of the remedies usually had recourse to in like cases, such as calomel, oil, laudanum, rhubarb, magnesia, and also some particular anthelmentics, as the child had many symptoms of worms; with at most, however, but a mitigation of the complaint. The child was removed to the country, where it spent two or three weeks, and returned considerably improved. The bowel affection, however, soon became worse than ever; the abdomen was prominent and tender, the thirst excessive, and the child though naturally fat had now become emaciated, and inclined to lie constantly upon his belly. It was indeed pitiful to behold the little sufferer lying in this condition and almost continually crying for cold water.

In this state of things, Aug. 26th, I discontinued the use of the powders of calomel and rhubarb the child was then taking, and substituted doses of grs. ii. each of the pulv. apocyn. cannabin. at intervals of three hours; and on the next morning, twenty-four hours from the commencement of them, I was happy in being informed that a favourable change had taken place, both in the appearance and frequency of the discharges.

The powders were regularly persisted in for a week, and the child's health went on rapidly improving. Neither vomiting nor purging was produced, but the morbid heat and thirst were allayed, the stools became natural, the sin soft and moist, and the functions of digestion and assimilation were gradually restored, and the child is at this time fat and healthy.

*Case 5th.*—In this case I tried the effects of the powder given in small doses, as a diaphoretic and expectorant.

It was a case of pneumonia, that occurred in Mrs. M. residing in Cypress Alley, Aug. 29th, and was treated on the usual antiphlogistic plan, substituting, after depletion, nauseating doses of the apocynum for ipecacuanha. It was exhibited in the humid way, gr. xv. to half a pint of warm water, and a table spoonful of this taken every hour. The nausea produced, after a few hours, was so oppressive that the patient omitted taking it; but it was afterwards taken in diminished doses, for two or three days. The effects were such as I should have expected from the like exhibition of the ipecacuanha. Arterial action was diminished, diaphoresis and expectoration promoted. As the patient was in a puerperal state and had nervous symptoms, I added, each evening to a dose of the apocynum, thirty drops of laudanum. The stitching pains and cramps were relieved, a gentle sweat occurred, and the patient rested well during the night. On the 5th day from the attack she convalesced, and recovered rapidly.

*Case 6th.*—Mr. D. J. aged twenty-one years, was a patient who visited the infirmary, and who was under treatment for an ammaurotic affection.

Being under the use of general and strong evacuants, he was ordered, Sept. 7th, gr. xxx. of the apocyn. cannabin. It operated as an efficient, though not speedy emetic, and occasioned several evacuations downwards. On the 9th, he again took of

it, but in larger quantity, viz. gr. xl. which vomited in thirty-five minutes; and in the course of an hour operated five or six times. During the day it purged about the same number of times. On the 11th, he took gr. lx. which produced full emesis and catharsis, as before; not differing from the operation of other emetico-cathartics, unless it were in producing a greater disposition to sleep.

*Case 7th*—Was one of general debility; the most prominent symptom being incontinence of urine. The patient, Sarah R. was a black servant residing in Bedford-street. I prescribed for her, September 8th, in conjunction with proper diet and regimen, the tincture of the apocynum cannibinum to be taken in doses of twenty drops three times a day. It produced nausea, and even efforts to vomit. The dose was reduced to fifteen drops, and continued for about a week, but as no good effect resulted from its use, it was superceded by other remedies. It was complained of as being extremely disagreeable to take.

*Case 8th.*—This case, I find in my notes, to be an old affair of chronic rheumatism; and the patient, (whose name I had omitted to mention,) a washer-woman living in Small-street. Several of the swellings upon the limbs and joints had run into a state of foul ulceration; she had been a patient in the Philadelphia Alms-house; was an habitual opium eater, and had applied probably to the Infirmary, more with a view to procure opium than with an expectation of receiving permanent relief. I find that from the 10th to the 30th of September I had prescribed the apocynum in the different forms of powder, decoction, tincture, ointment, and poultice; but all to no purpose in effecting a cure. The evacuations, together with the emolient applications, lessened the inflammation, swellings and sanious discharges, and the appearance of the ulcers, in some instances, was much improved. Relative to the immediate effects of the different applications of the medicine, I see that it showed activity in all its forms. The powder, during its exhibition in a course of emetics, produced full vomiting in doses of gr. 10; and I observe that under the date of the 17th, the decoction produced hyper-emesis and catharsis, that lasted about twelve hours, and

that according to the account of the patient, she must have vomited fæcal matter in the form of scyballe, from the intestines. The decoction seemed most inclined to purge. Upon the whole, considering the extreme susceptibility of the patient to its action in any form, I was led to a careful exhibition of it, and only in small doses.

*Case 9th.*—This was a case of hernia-humoralis, the patient Mr. T. M. South Sixth-street, during the treatment of which I prescribed several emetics of the pulv. apocyn. cannabin. in doses of about thirty grains, which produced full vomiting followed by purging; and attended with this peculiarity, that the patient uniformly fell asleep, and was awakened by efforts to vomit. The emetics were taken in the morning.

*Case 10th.* September 14th.—Mr. D. J. S. æt. twenty-six years. Ammaurosis. This being pretty much a hopeless case, though under treatment by the moxa and electricity, together with evacuants; the pulv. apocyn. cannabin. was given both as an emetic and errhine. Administered as an emetic it required large doses to produce full vomiting, viz. sixty grains; which I imputed to the habit acquired from the previous exhibition of strong emetico-cathartics. As a sternutatory its operation was powerful, producing long continued sneezing, with copious secretions from the nose, eyes and mouth. The gentleman afterwards went to reside in New York, and has since sent for a quantity of it, to keep by him as a snuff.

*Cases 11th and 12th.*—These were two cases of scrofula that occurred in the children of Mr. G— residing in the Northern Liberties. I see from my notes, that from September 15th to October 6th, I prescribed the plant in tincture, powder and extract. It showed its active properties in all these forms, but evinced no tendency to produce a cure. A full dose of the powder occasioned sleep both before and after vomiting. The tincture in doses of thirty drops produced nausea. The extract could not be retained on the stomach, but produced almost immediate vomiting.

*Case 13th.*—September 17th. A negro man in Small-street desired me to bleed him, for a severe pain in his side. I found also that he had a dysenteric state of the bowels. I bled him,

and gave him a dose of the apocynum which produced vomiting, sweating and purging, and entirely relieved him.

*Case 14th.*—September 24th. Sarah W. æt. twenty-eight years, came to the Infirmary complaining of gastric symptoms in general. She was ordered a vomit, viz: gr. xxx. of the apocyn. to be taken that evening, and was requested to call next day for some pills. She did so. The medicine had operated well, and greatly relieved her.

*Cases 15th and 16th*—Were like the last mentioned only corroborative testimony of the activity of the powder, and its adaptation to bilious affections, as a safe, proper, and salutary emetico-cathartic.

*Case 19th.*—Mrs. B. æt. 25 years—South Sixth-street. When I first saw this woman, September 29th, she was in a paroxysm of hysteria, attacks of which she was very subject to. She was of plethoric habit, and a florid eruption was to be seen on the face, neck and arms. I took 16 oz. of blood, when she became sensible and answered to questions. I found she was troubled in a painful degree with hæmorrhoids, and had been, more or less, since her confinement, a few months previously. I ordered her a pedeluvium that evening, and put her upon a course of emetics of the apocynum, in doses of gr. xx. Local applications and ablutions were also advised. The emetics had a very happy effect; the bowels were kept soluble, and in little more than a week the tumours subsided.

Other cases might be added illustrating the utility of this plant and its applicability to the treatment of diseases where full vomiting and purging are demanded.

The root possesses all the medicinal properties of the plant and is active throughout, both in its cortical and ligneous portions. Water or proof spirits is its proper menstruum.

In powder it is an emetic cathartic, expectorant, diuretic and diaphoretics. In decoction it seems to lose some of its emetic properties, and to act more upon the bowels as a hydrogogue cathartic.

*Communicated by Benjamin Welch, jr. M. D. of Norfolk, Ct.*

"In relation to the subject of your thesis, all that I know of it is derived from Dr. Ives' Lectures: my notes are as follows:

Apocynum, *Dogs-bane, Indian hemp.*—The appearance and

sensible properties of its root resemble ipecac. except it is more bitter. There are several species. It is inferior to ipecac. requires larger doses, and is not so much of a diaphoretic. It is a milky plant, and when recent is acrid. Used as a lotion to cure itch and other eruptions; used as a sternutatory; perhaps it is one of the best that is used for this purpose. It is formed into a powder called cephalic snuff. In haste,

I am truly yours,

BENJAMIN WELCH, Jr."

Dr. M. L. Knapp.

*Aug.* 22*d*, 1825.

Since my Thesis was handed in, I have received from the highly respectable source of Dr. Parrish of this city, (as well as from the patient himself,) the following particulars of a perfect cure of dropsy that was effected by this plant. I have obtained leave to annex them in this place.

The patient, Mr. J. Morgan, a very respectable gentleman of about fifty years of age, and now residing in Lodge-street, was treated by Dr. Parrish during the last summer for a confirmed dropsy of the belly, that had been accumulating for upwards of a year. The Doctor informs me that a rigid course of treatment was for a long time persevered in, but that the whole routine of remedies, cal. squill crem. tart. jalap, &c. entirely failed.

The necessity of tapping was more than once urged, but the patient stedfastly refused.

It now occurred to the Doctor's mind, that some years since, while travelling through the lower part of New Jersey, a young man came under his notice, in whose case an astonishing cure of dropsy was said to have been effected by a nostrum prepared from a plant that grew common in that section, (and which was the Indian hemp,) by an old herb doctor, a native of India, and who now resided in town. The patient was informed of the particulars. The old East Indian was found, the plant obtained from Jersey, and a decoction prepared of about the colour of the white wines, and a wine-glassful taken three times a day.

Its effect was that of a hydrogogue cathartic producing (as the patient himself informed me) as many as forty copious watery stools in twenty-four hours! It also occasioned great sickness and vomiting. The system was soon relieved of all dropsical effusion, and in two months time, without the aid of any other remedy whatever, the patient's health and strength completely re-established.

This gentleman has since recommended it to some of his acquaintances labouring under dropsy, and in general with the happiest effects. I was referred to the brother of one of the patients, Mr. Dallat a respectable tallow Chandler in Market-street, whose sister had been much relieved of a dropsy of ten years standing by the use of a decoction of the root, as in the above case, and continued only for one week. The friends believed that a complete cure might have been accomplished in her case, had she received a sufficient supply of the plant to have continued it longer. The enormous swellings of the lower extremities entirely subsided, and the patient's body was reduced nearly to its natural size. The lady resides in the country, towards Lancaster, and is about forty years of age. She has since been supplied with the drug, but her constitution being much enfeebled, she has not had courage again to undergo the severity of its operation.

*Chemical Analysis. Process 1st.*—August 9th. A watery decoction of the roots of the plant being made, it was subjected to

the following re-agents or tests. 1. A solution of gelatine flung down a brown precipitate. 2. The salts of iron caused the liquor to assume a black colour, and threw down a copious black precipitate. 3. The acetate of lead threw down a brownish precipitate. 4. The salts of tin immediately occasioned a very copious fawn coloured precipitate. These show clearly that tannin and extractive are prominent principles in the plant.

*Process 2d.*—Aug. 10th. To two ounces and a-half of the recent root, bruised, were added oz. viii. of alcohol. This was steeped for two weeks, when it exhibited the following appearances and phenomena. Colour that of the white wines; taste disagreeably bitter. A few drops of water let fall into a portion of it occasioned a turbid appearance; poured in, in larger quantity, the mixture assumed an opaline appearance, and on standing let fall a white floculent precipitate. A given portion of it being evaporated to dryness, a dark brown-coloured extract was obtained, exhibiting the properties of resin united with some impurities; and by which it was ascertained that alcohol, at the temperature of the atmosphere, takes up 1.041 per cent. of its weight, or about gr. v. to the ounce. Of this .666 parts per cent. were found soluble in water, leaving .375 per cent. of resin.

*Process 3d.*—Aug. 11th. Two ounces of the recent root sliced, were put in maceration in two ounces of sulphuric ether. On the 19th the following phenomena were shown with it. Poured into alcohol it rendered it permanently turbid. Suffered to evaporate over water, a cream coloured substance was left, that exhibited all the sensible properties of caoutchouc. A small dark coloured rod, repeatedly dipped in the solution, and the ether suffered to evaporate each time, received a sensible coating; showing that bougies, or catheters, might perhaps be constructed of it.

*Process 4th.*—Aug. 16th. An ounce of the pulverized root was put in half a pint of water, and digested for a week in a cool place. The liquid then had assumed somewhat of a yellowish colour, and gave a very persistent bitter taste. It was filtered and submitted to the action of the following re-agents.

1. The vegetable alkalies and lime water occasioned no precipitate. 2. Nitrate of silver rendered the solution of a pur-

plish colour, and threw down a very soft flaky brown precipitate. 3. Tartar emetic produced no change. 4. Corrosive sublimate had no effect. 5. Muriate of tin occasioned no precipitate. 6. Acetate of lead threw down a copious yellowish-white precipitate. 7. The sulphates of zinc and copper produced no alteration.

From these experiments I warrantably inferred that I had obtained another of the proximate principles of the plant, viz. the bitter principle; inasmuch as Thompson* declares that the "nitrate of silver and acetate of lead are the only two bodies which throw it down."

*Process 5th.*—Oct. 25th. Two ounces and a-half of the pulverized root were digested for some hours in oz. iv. of sulphuric ether, in a retort, with a gentle heat. The heat was then increased, the ether driven off, and oz. iv. of alcohol added. The process was conducted for some hours again over a gentle heat, and then the alcohol made to boil, when it was poured through a searce, and the powder treated with fresh portions of alcohol as long as it imparted to it any colour. This, on cooling, let fall a copious white, or yellowish-white precipitate, which had a waxy appearance and feel. When heated in an iron spoon, it melts, froths, swells up, smokes, and then takes fire and burns with a vivid white flame, and leaves a light flaky charcoal in very minute quantity behind. The alcohol was found to redden litmus paper, and to yield a copious precipitate on adding a weak solution of gelatine. A portion so treated, was evaporated to dryness by a gentle heat, which left a semi-transparent yellowish substance behind, which was at first hard and brittle, but which deliquesced in the atmosphere. This was referred to Professor Barton for his opinion upon it; to whom there appeared so strong a similarity between it and the cinchonin, in all its sensible properties, that he judged it would be difficult to discriminate between them. This was re-dissolved in water, filtered, and again evaporated to dryness. The residuum consisted of light scales of a brownish colour, possessing a degree of metalic lustre.

These scales melt readily upon the tongue, and communicate

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* Vide Thompson's Chem. vol. iv. page 48.

a taste, that is at first of a mawkish sweetness, but soon betray in an intense degree, the peculiar taste of the plant. I had not an opportunity of ascertaining the effects of this product upon the system, the servant having destroyed it by cleansing the china-cup that contained it.

*Process 6th.*—A quantity of the pulverized root was digested first in ether, then in alcohol, and treated with successive portions over a sand bath until the liquor came off colourless. The whole, when cold, was filtered, evaporated to dryness over a water bath, re-dissolved in water, again filtered, and digested for twenty-four hours upon the carbonate of magnesia. Alcohol was then freely added, and the magnesia thoroughly washed, and being separated by the filter, the evaporation was again conducted to dryness, over a water bath at the boiling temperature.

The result was a semi-transparent yellowish-brown, or sugar coloured mass; hard, brittle, and exhibiting a resinous or micacious fracture.

It is slightly deliquescent, of a mawkish-sweetish taste, becoming sub-acrid, bitter, and very persistent, and occasioning a swollen sensation of the lips and tongue.

Given in doses of from three to six grains it excites full vomiting, followed by sleep, prostration, purging, and temporary ptyalism.

It bears some analogy in its characters to emetin, but more I think to cytisine, of the *cytisus laburnum;* and being the peculiar principle of the apocynum in which its active properties reside, in a state approaching to purity,* is justly entitled, I think, to the appellation of *Apocynin.*

From this analysis of the plant, rude and unfinished as it is, it appears that the following are proximate principles of it:

1. Extractive colouring matter.
2. Tannin.
3. Gallic acid.
4. Resin.
5. Wax.

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* This preparation contains, I think, besides apocynin, bitter principle, and suggests the use of acetate of lead in its further preparation.

6. Caoutchouc.
7. Bitter principle.
8. Fecula.
9. Woody fibre.
10. Apocynin, or the peculiar principle in which its active medicinal properties reside.

To conclude, I must claim the indulgence of those who have gone before me, inasmuch as no definite rules have yet been laid down for the chemical analysis of vegetables; but in every particular case, the analist must, as it were, invent a method for himself, follow his own judgment, and be guided by his own experience, progressing with the slow pace of the self-taught pupil.

It is apparent, that the science of vegetable chemistry invites to its cultivation, and greatly is it to be hoped that the spirit of research and discovery, so remarkable in our countrymen, will, on this subject, become more operative. The materia medica so far from being redundant, as some have supposed, is doubtless destined to be much farther enriched with the concentrated or peculiar principles of vegetables, that will in their application be found preferable to many of our mineral products, those banes, too often, of the health and constitution, which, like the Vampyres of Java, eventually destroy the blood, while they lull in present security the unsuspecting victim.

Nearly connected with the march of these improvements is a cultivation of the science of botany; which, so far as my observation extends, is at present a neglected subject, a system of botany scarcely finding its way into the libraries of the physicians of our country; and though students may resort to the schools for instruction, still it there constitutes no part of the usual routine of their studies. Would it not be better for science and the profession, were our medical schools to be endowed with a professorship of botany, and a thorough knowledge of its principles made necessary to graduation? Should this plan be adopted it is but reasonable to suppose that a more general spirit of research would pervade our country, and ere long should we be able to reverse the position of the poet, and say,

*Not* "many a flower is born to blush unseen
And waste its sweetness on the desert air."

# QUARTERLY HISTORY

OF

## IMPROVEMENTS IN MEDICINE, SURGERY, &C.

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### ANATOMY.

1. *Lachrymal Nerve.*—It is stated in the Medical Repository, on the authority of a private letter from Paris, that M. Amusat has discovered the lachrymal nerve to be a branch of the pathetic, or fourth pair, and not, as has been hitherto supposed, of the ophthalmic portion of the fifth. It is stated also, that Richerand confirmed the fact. If this turns out to be true, it will be extremely interesting when taken in connexion with the late splendid discoveries of Mr. Charles Bell.—*Anderson's Journal.*

2. M. Bogros *on the Tubular Structure of the Nerves.*—We mentioned in our last, that M. Bogros had succeeded in satisfying himself, by experiment, that the nerves can be injected, and are therefore tubular. This will soon be determined, for the Academy of Sciences has appointed a committee to examine, repeat, and report upon the experiments of M. Bogros, which we gave in our preceding Number. When we mention the names of Cuvier, Dumeril, Geoffroi St. Hilaire, and Dupuytren, as the members of the committee, our readers will be satisfied that the experiments will be properly appreciated. We should conjecture *à priori*, that M. Bogros has mistaken the tubes of the *vasa nervorum* for the tubuli of nerves.—*Ibid.*

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### PRACTICE OF MEDICINE AND PATHOLOGY.

3. *Observations on the Saliva during the action of Mercury on the System. By J. Bostock, M. D.*—According to the experiments of Dr. Bostock, the saliva during ptyalism contains no mercury; nor could he trace either alkali or acid in this secretion during salivation. After the effects of the mercury had gone off, however, he found the saliva impregnated with an uncombined acid.

"The conclusions," he observes, "which we may draw from the above experiments, on the nature of the saliva discharged while the system is affected by the action of mercury, are suf-

ficiently remarkable to arrest our attention. We learn from them, in the first place, that no portion of the mercury is actually present in the fluid, from which it follows that the effect of this medicine, although so remarkably manifested upon the salivary glands, must be produced through the medium of the system generally, and hence we may presume that all the organs destined for the secretion of mucus will undergo the same change. This change would appear to consist essentially in the conversion of the animal matter, from the state of a mucus to that of a serous, or rather of an albuminous fluid.

"Now, although we are not sufficiently acquainted with the theory of secretion to know what are the minute operations which enable the capillary vessels connected with the glands to produce their appropriate fluids, yet we may form some idea of the relation which they bear to each other, as far, at least, as regards the greater or less complexity of the process. All those fluids, for example, which proceed from what are termed serous membranes, appear to differ from the serum of the blood solely in the proportion of albumen which they contain, and we may therefore conceive that they are generated by a process resembling transudation, and that this is, in a great measure, of a mechanical nature. In the secretions, however, which are discharged from the mucous surfaces, we find a change effected which is of a chemical nature, where a new substance is generated which did not previously exist in the blood. In what way the vital functions act, so as to convert albumen into the mucilaginous matter which forms the basis of saliva is, at present, beyond our power to ascertain; but whatever it be, we find that in the case before us, the operation of mercury upon these parts is to counteract the ordinary secreting process, and to reduce the action of the glands to that of mere transudation." —*Med. Chirurg. Trans.*

4. *Fosbrooke on the Relations of the Kidneys and the Brain.*—The title of this brief volume will at once shew the great importance, but greater difficulty of the subject; and Mr. Fosbrooke, who is not unknown as a medical writer, has done himself credit by the line of inquiry which he has started. In so short a notice as this must necessarily be, we cannot go into any of his facts and illustrations; but we shall probably take an early opportunity of laying before our readers what we find in them that is important or novel.—*Anderson's Quarterly Journal.*

5. *M. Flourens on the sense of Hearing and the Causes of Deafness.**—The author from several experiments concludes:—

1st. That the destruction of the tympanum and hammer do not materially affect the hearing.

2d. The removal of the stirrup weakens it considerably.

3d. The destruction of the membrane which covers the fenes-

* Bulletin des Sciences Medicales.

trum ovale (the stirrup being still removed) weakens the auditory sense still more.

4th. The replacing of the stirrup restores to it some degree of energy.

5th. The rupture of the semicircular canals renders suddenly the hearing painful and confused, and causes, at the same time, a quick and violent agitation of the head.

6th. When the vestibule is exposed, there does not result any remarkable affection of the hearing.

7th. The partial destruction of the nervous expansion in the vestibule partially destroys the sense. The complete destruction destroys it entirely.

The part therefore, most essential to the function, is the nervous expansion of the vestibule; and strictly speaking, it is the only indispensable part, the others merely contributing to the extension, the energy, and modifications of the function, or to the preservation of the organ.

In making a practical application of these experiments, there is one cause of immediate and absolute deafness apparent, namely, the destruction of the nerve or of its expansion in the vestibule; and there are several causes of dulness of hearing, such as the destruction of the stirrup, of the vestibulary orifices, and of the walls of the vestibule and semicircular canals.

The previous experiments of M. Flourens having shewn that the sense of hearing is lost by the removal of the cerebral lobes, without any part of the ear being touched, it follows that the loss of the organ of sense is completely distinct from the loss of the organ of sensation; and as each of these species of deafness is attended by peculiar symptoms, we may hence be able to ascertain the part affected; and, having discovered the seat, may thence determine the comparative importance and severity of the disease.—*Ibid.*

6. *M. Meyraux on the Cauterization of the Pustules in Small Pox.** —Experience has proved to M. Meyraux, that cauterization, in order to be beneficial, must be practised the first or second day of the eruption. When employed later, it has not the effect of destroying or preventing the formation of the pustules which follow their regular course, and leave the usual marks and excavations in the skin. Many methods of using the caustic have been practised; that most commonly adopted, is to wash the part with a solution of the nitrate of silver; but the author objects to this method, and mentions many inconveniences attending it, the first of which is, that it acts upon the sound as well as upon the unsound parts; and the second is still more forcible, for he asserts, that the development of the pustules still goes on under the black crust, or mask, to the same extent as if it had not been employed. The safest method, according to

* Archives Generales.

M. Meyraux, is to open the pustules one after the other, and to apply to them a piece of the lunar caustic in the shape of a pencil; for the purpose of opening them, a lancet is the best instrument. It is a very curious circumstance, that the passage of the galvanic fluid, which never produces the inflammation of any organ, completely extinguishes the pustules of small-pox. The most efficacious method of producing this almost instantaneous effect, is to make use of a very fine needle, which is to be placed in the pustules, and the voltaic fluid is to be made to penetrate them. As the success of cauterization is subordinate to the general treatment of the patient, none of the usual indications of cure are to be neglected. The author has remarked, that the application of the caustic only becomes useful when the inflammatory action has been subdued, either in the principal viscera, or in the skin, when the inflammation of that part predominates; for then the general re-action becomes more intense, and the suppuration of those pustules, which have not been destroyed, is more abundant. M. Meyraux has proved, that the advantages of this plan may be extended to cases of boils, venereal pustules, the chicken pock, and some other eruptive diseases.

A warm discussion on this subject recently took place at Paris, between some of the most eminent practitioners, but the general impression seems to have been unfavourable to this new method of treating small-pox.—*Ibid.*

7. *Dyspnœa. Singular Case of.*—The subject of the present article was a woman, about twenty years of age, who had enjoyed good health until about a week before the time referred to in the following extract, when she began to complain of some difficulty of breathing. This had, it appears, increased so much, that the relatives now considered the case as entirely hopeless, as we are told.

'Indeed,' the mother said, as we were going towards the bed-room, 'you are quite too late, sir, you can do no good.' Upon entering the room, I found the respiration so very laborious, and at times so interrupted, that I was of the same opinion. Bleeding, and various other remedies, had been tried during the three days preceding the time of my visit, without any good effect whatever. I directed the mother to make a long and broad *bandage*, which we applied pretty tight round the thorax, and a good part of the abdomen. The respiration gradually became more easy, and in the course of twenty-four hours it became so easy (*it had become*,) that the poor patient could walk gently about the house.—*Dr. Gilby, of Clifton, in a private letter, dated October* 31*st*, 1825, *and quoted in Lond. Med. Journ. for Feb., p.* 174.

*Observations.*—We leave our readers to form their own conjectures respecting the nature of the disease in this case; and to admire, at their leisure, the elegance of the style in

which the particulars of it have been conveyed to us by the reporter.

8. *Observations upon Diseases of the Nervous System.*—By M. Serres, Physician to the Hospital la Pitié.

*Account of an Organic Change in the Nervus Trigessimus, accompanied with the loss of Sight, Smell, Hearing, and Taste of the same side.*—Hubertin Joseph Lainé, twenty-six years of age, a potter, entered my department of the Hospital la Pitié, on the 29th of September, 1823. His constitution was delicate, his temperament lymphatic, and his life had been regular, but he had been somewhat addicted to masturbation.

His general appearance was dull; his physiognomy was that of an imbecile man; he appeared to understand slowly the questions that were put to him, and had much difficulty in finding words to answer them. His pronunciation was difficult, and evidently made with considerable effort. His head was so large that some of the pupils imagined that hydrocephalus had commenced, and that there was a separation of the temporal and parietal bones; but the prominence of the eyes induced M. Serres to form a different opinion. There was a slight separation between the os maxillare and zygomatic process of the temporal bones, with a consequent flattening of the nose. The bones of the right side of the face were rather larger than those of the left, rendering the former the most prominent. The patient had some difficulty in moving his tongue. The sensibility and power of motion in the limbs seemed no way diminished, though sometimes he appeared to use the inferior extremities less freely than the superior. Such were the circumstances in which he was found. M. Serres learned also that he had been subject to epilepsy, the first attack of which had commenced two years before, without any assignable cause. He had a deaf and dumb sister.

The attention of M. Serres was first directed to the epileptic attacks, which were frequent, and always commenced with convulsions of the right side. The right eye also was affected with scrophulous ophthalmia. Some circumstances having been observed in this patient similar to what had appeared in another individual who had died of epilepsy, and the appearances of whose brain on dissection were somewhat remarkable, M. Serres endeavoured to learn from Lainé his sensations during the paroxysms. The effort however he made to comprehend and answer the questions had very frequently the effect of inducing the paroxysms, so that M. Serres was compelled to omit his inquiries from the patient himself.

The change of circumstances, and the quiet in which he was placed, made a very favourable change in the frequency of the paroxysms, which, instead of recurring three or four times a day, as upon his first admission into the hospital, exhibited inter-

vals of from eight to twenty days. His appetite returned, he gained in flesh, and enjoyed better spirits.

About the middle of December, the right eye was attacked by ophthalmia, with œdema of the eye-lid, and opacity of the transparent cornea. A seton was inserted in the nape of the neck, and the inflammation diminished, the opacity of the cornea, however, at the same time increasing, so that when the ophthalmia had disappeared, the cornea had become perfectly opaque. The epileptic attacks were renewed with their former frequency, and principally in the night. The convulsions were confined to the right side, and consisted in an alternate flexion and extension of the leg and arm, but chiefly of the latter, with occasionally a tetanic rigibility of these limbs, of some minutes' duration. Having been led by some of Magendie's experiments upon the nerves, to suspect that this was an affection of the fifth pair, his attention was directed to the nostrils and tongue. The right nostril was insensible to stimuli; the left eye and left nostril were in their natural state. The tongue at this time, June 1st, 1824, exhibited nothing peculiar. On the 7th of June, the right eye and nostril were in the same condition, and pepper placed upon the right side of the tongue made no impression —placed upon the left, it produced a strong impression. On the 20th, the gums of the right side were slightly inflamed, and had the appearance of incipient scurvy. The hearing of the right side was not affected. The gums on the left side were sound.

On the fifth of July, dyspnœa was observed; the scurvy increased; the left gums still were unaffected. Towards the 16th, these also were comprehended in the disease. About the 4th of August, the hearing on the right side was diminished; but improved again after the application of a blister. It remained, however, still less than on the left side. On the 11th of August he died.

The body was opened the next day. The internal surface of the dura mater was injected on the right side; on the left it was thickened, and of a dirty-white colour. The tentorium cerebelli still were thickened, and adhered to the upper surface of that organ. The brain was removed from the skull with great care: but the trunk of the fifth pair was nevertheless detached from the annular protuberance in raising this last part.

The dura mater was detached from the right spheroidal ossa, and the ganglion of the right nervus trigessimus on the right side was in an unusual state. The ganglion was swelled, and of a grayish-yellow colour, and the fibres were separated by effused serum. Internally, the part of the ganglion from which the ophthalmic nerves arose, was red and injected. This redness extended also to the dura mater, covering it. At the posterior part of the ganglion, the nervous fasciculi were isolated by se-

rum. The internal fasciculi were of a duller white than the external, but both were darker than usual. The alteration of the ganglion extended forwards in the three principal branches. The affection of the ophthalmic branch appeared the oldest, and the inferior maxillary nerve was more altered than the superior. These three nerves were of a dirty yellow, which colour continued to their issuing from the cranium. The right optic nerve, just behind the eye, was less than the left. In the remainder of their passage these nerves were similar. That part of the annular protuberance corresponding to the origin of the right nervus trigessimus, exhibited the same yellow gelatinous matter as was found in the extremity of the nerve. The left hemisphere of the brain was softened more or less throughout.

The details of this dissection, given by M. Serres, are extremely lengthy. We have, however, we believe, extracted all the important circumstances.

To this case M. Serres has added, that two similar instances in the incipient stage have been cured, under the superintendence of MM. Magendie and Edwards. We cannot, however, say, that we feel satisfied that the cases are the same, neither has M. Serres stated the mode of treatment that proved so successful. Should any detail of these cases be hereafter given, we shall feel it our duty to lay them before our readers.—*Editors.*

9. *Epileptic Convulsions from slight injuries on the Head, by Dr. Blake.**—A young man, of a bilio-sanguineous temperament, a private soldier in the 5th regiment of foot, then stationed at Dominica, received, whilst wrestling with a robust comrade, a blow from the clenched hand of his opponent on the centre of the *right* parietal bone.

This was on the 4th of February (1824), and on the 8th the young man was admitted into hospital with the common symptoms of fever, which yielded to the usual antiphlogistic treatment in a few days. The headach, however, which had hitherto been considered merely as a febrile symptom, remained after that state was removed, and even increased in violence; the tongue, at the same time, becoming extremely foul, and the pulse unusually slow.

For these complaints, blisters were applied to the head, purgatives were exhibited, and bleeding, both general and local, was employed; mercury also was administered, and as soon as its peculiar action became manifest on the system, the headach, &c. ceased, and the man was discharged from hospital, in apparent good health, on the 24th of the month.

On the 29th, however (that is, on the fifth day after,) he returned to that establishment, complaining of pain in the whole of the upper part of his head; the pulse at the same time being

* Lond. Med. Jour. for Jan. 1826.

as slow as sixty in the minute, the tongue loaded, and the pupils much dilated.

A repetition of the treatment, which had already proved successful, was now put in practice; but not with a similar result, for the patient did not experience the slightest relief; and on the 2d March (third day after re-admission,) he was seized, at about two o'clock P. M. with a fit of *epileptic convulsions;* on recovering from which, he was found to be affected with *paralysis* of the *left* side.

The epileptic fits were shortly renewed, and continued with very little intermission for about five hours; when the stertorous breathing, the rattling in the throat, the state of the pulse, and the general appearance of the man, all indicated the near approach of death. Under these circumstances, bleeding, the croton oil, and active enemata, having been already tried in vain, it was determined, in consultation, to apply the *trephine* to the site of the original injury on the side of the head.

Accordingly, about seven o'clock, P. M., Dr. Blake, in the presence, as he informs us, and with the assistance of Staff Surgeon Ramsay, proceeded to remove with this instrument a portion of the *right* parietal bone. In doing this, it was observed that the bone was very thick, and that but little adhesion seemed to exist between it and the dura mater. The inner surface of the bone, however, did not exhibit any irregularity calculated to irritate the dura mater; nor was there any fluid effused upon that membrane—nor any appearance of effusion or suppuration having taken place beneath it; yet the moment the circle of bone was removed, the epileptic paroxysms, previously so severe, became considerably mitigated; and in a few hours thereafter ceased altogether. In less than a month, also, the paralytic affection of the left side entirely ceased; and the man having been sent to Europe, was soon restored to perfect health.

*Observations.*—This case is very creditable to Dr. Blake, and may be considered as a fair specimen of bold and judicious practice, modestly and clearly told.

It is, moreover, interesting in another point of view; namely, as a striking example of the serious consequences which sometimes arise from injuries on the head, in themselves apparently trifling, and productive of no marked local effects.

To his practical details, Dr. Blake has added some remarks, upon the manner in which the operation in this case may be supposed to have acted, in producing immediate relief and ultimate recovery. As these remarks, however, are rather of a speculative nature, we must pass them over in silence as not well adapted to this place,* and hasten to lay before our readers

* We feel the less regret in acting thus, as these remarks will probably receive some notice from one of our cotemporaries, upon whom this 'bold dragoon' has discharged a passing shot.

another case of *epilepsy, &c.*, which our ingenious author has also quoted as a proper *pendant* for the preceding.

Case II.*—A man, aged about thirty-five, who had received a slight blow on the head, began some time after to labour under pain in the whole '*sincipital* region,' as the reporter calls it; and in a few months became affected with complete *amaurosis* of both eyes. Remedial treatment was employed for these affections under eminent surgeons, but without much benefit; and in addition to his other maladies, the man soon became *epileptic*. After suffering, in a hopeless manner, with these complaints for the space of six months, the patient fell into a comatose state, and in a few days after died.

On opening the head, it was found that the internal table of the cranium did not adhere with its usual firmness to the *dura mater;* the skull-cap dropping off as soon as the bone was divided all round with the saw. Absorption, also, it is added, had rendered the surface of the cranium unequal (*quere*, which surface?) but no other unusual or morbid appearance is said to have been observed.—*Lond. Med. Repos.*

10. *On the Milky Appearance of the Serum in several Diseases.* By Robert Venables, M. B. &c.—In the Repository for this month (Vol. xxv. No. 146,) and in the xxvi. art. entitled 'Clinical Remarks on the Diseases most prevalent during the preceding month,' I find the following observation: 'One case of acute pericarditis came before us, complicated with a much slighter inflammation of the lungs. The disease yielded to the usual treatment. *We mention this case in order to notice what has not, as far as we are informed, been before recorded,—the serum of the blood taken from the arm of this patient, at two blood-lettings, exhibited each time a milky or whey-coloured appearance.*' The appearance above noted has not escaped my observation; and in proof of what I advance, I beg to refer to the preface to my Clinical Report on Dropsies, p. 26. In the note, the following observation upon this subject appears: 'The report of the appearance on the 12th, at p. 54, and the observation in the note, p. 55, may appear directly contradictory. The observation at p. 54, regards the serum. *A dense milky appearance* I regard as indicative of an inflammatory state of the blood; and in the first impression I had introduced a conclusion to this effect. However, I thought it better to submit this opinion to the test of future experience, before adopting any conclusion upon the subject.'

Farther experience has confirmed the accuracy of this statement; and it must be highly gratifying to me to find my views confirmed under the peculiar circumstances in which they are in the Repository. This appearance, in all the cases, was observed under inflammatory action.

* *Case* 2.—From Edin. Med. Journ. vol. xvii. p. 322.

With respect to the cause of this appearance, I should doubt it depending on oleaginous matter in the serum. However, it is necessary to state that there are two sources or varieties of this appearance. In the one, the coagulum formed by heat assumes a dense, heavy, and solid consistence. In this case the coagulum readily forms; and under such circumstances an inflammatory state of the blood may be safely inferred. In the other, the coagulum does not form so readily, is more brittle, and resembles more the curd of some milk. This state appears to depend upon an intermixture of chyle, and hence its appearance seems to indicate some defect in the process of sanguification.

In calling your attention to this circumstance, I am far from wishing to dispute either the honour of originality of observation or priority of statement; but I am desirous that the few merits which the publication on dropsies may possess should be plainly put before the public, the more especially as upon several occasions its defects have been sought out with an avidity, and dwelt upon with a degree of sarcasm, which savour rather of personal hostility than a desire for the advancement of philosophy and truth.—*Ibid.*

Henley upon Thames, Feb. 6, 1826.

11. *Cerebral Croup. By Dr. Pretty.*—Perhaps your readers will pardon me if I extend this communication by offering a few observations upon another species of croup, to which young children are subject, and concerning which medical men are a little divided in their opinion. I allude to that peculiar species of convulsive disease, named Cerebral Croup, and which is described by the late Dr. Clark, in his "Commentaries on the Diseases of Children." I was first engaged in endeavouring to understand this complaint, in consequence of two of my own children becoming the subjects of it. One of them, after having been for several weeks affected, at indefinite times, with paroxysms of spasms, accompanied with a croupy inspiration, but apparently otherwise in the possession of health, with the exception of an occasional bowel-complaint, was seized with two slight convulsions in the morning; a third occurred in the afternoon of the same day, and which terminated her existence almost instantly. Upon dissection, the blood-vessels of the brain were found unusually loaded, and effusion had taken place into the ventricles, and between the arachnoid and pia mater. Four introsusceptions of the ilium, without any evidence of local inflammation, were also discovered; but no other appearance of disease. My second child was seized with a convulsion a week after the death of her sister, (they were twins,) which was followed by repeated paroxysms of croupy and impeded respiration, which threatened the production of another general convulsion; symptoms of meningitis supervened, as also those of effusion—such as the peculiar motion of the arm about the head,

frequent startings with screamings, insensibility, squinting and dilated pupil, &c. These very formidable symptoms were removed by leeches to the temples, blistering plasters to the neck and head, with calomel purgatives; but the croupy paroxysms continued for several months, when they ultimately yielded to the exhibition of mistura assafœtida, which was prescribed by a medical friend. It appeared here to have been continued by the force of habit, the original cause having been removed long before the spasmodic actions were overcome. The age of these children, when attacked with convulsions, was eight months.

My third child, when seven months old, was taken ill like his sisters. The nurse who had the care of him neglected to give him proper exercise, and moreover frequently fed him with spoon-food, when he ought to have had the breast. He was occasionally disordered in his bowels, as most children are during infancy; and, for some time prior to his illness, he could never bear that active exercise in the arms which a good nurse will always give to a healthy child, without the respiration and circulation becoming so seriously impeded as to give alarm for his safety to all present. The attack of croup was preceded by a few days of febrile excitement, with cough, and sudden startings without any apparent cause. The treatment consisted of the application of leeches, with the exhibition of aperient and saline medicines. He improved under this plan, but the spasms did not leave him. A few weeks after this illness, he was seized with a convulsion, and the same means were again resorted to, with equal benefit; but, the spasms frequently recurring, I was constantly in fear of a repetition of convulsion. I had the child weaned, and sent him a few miles out of town; where, under the care of a more trust-worthy nurse, he gradually lost the complaint, and is now a fine healthy little fellow.

Not fully understanding the nature of this affection, I took every opportunity that presented of asking my medical friends for their opinion; and I am sorry to say that I was, if possible, more perplexed than before, for I scarcely found any two of them to agree, though several stand deservedly high in their profession, and I much respect them for the possession of superior medical talents. I trust that, without giving offence to any, I may say, that by one it was considered to arise from the cutting of a tooth, the obvious remedy for which was lancing the gums: this was done, but no tooth was cut till two months after the complaint had disappeared. The wet-nurse was also recommended to be changed. By another it was a cerebral affection, and serious in its consequences. A third gave it as his opinion that gastric and intestinal irritation was the cause, without any particular reference to the head. By a fourth it was supposed to depend upon local pressure on the recurrent nerve, or its branches: an external application was

recommended, and some alterative medicine prescribed, and the child to be weaned.

About this time the disease had accidentally excited a good deal of attention, and some excellent communications appeared in the different Medical Journals; but concerning its pathology and treatment there seems still to exist a great discrepancy of opinion. Upwards of a dozen cases have been under my care, independent of the experience I have had under my own roof; and in all I have seen such powerful reasons for believing the affection to be produced by cerebral irritation, that I do not hesitate to give it as my opinion, that, in by far the majority of cases, the encephalon was the seat of the complaint; and, although the cutting of a tooth, or the irritation arising from disordered bowels, may occasionally prove the exciting cause, that it mainly depends upon something wrong within the head. In confirmation of my opinion, I would draw the attention of your readers to a paper upon Meningitis, in the "Medical Repository," written a few months since by Mr. DAVIES, in which the symptoms there detailed as characteristic of that disease, have been more or less present in all acute cases of this species of croup that have come under my observation.

These spasmodic attacks are very generally the precursors of convulsions, unless means are adopted to prevent them, and then children die of meningitis. This fatal course happened to a child in a family where another had previously died of meningitis, and subsequent effusion. A third child in this family had the complaint a year after, and it continued for three or four months, during which time he experienced two seizures of convulsions, and the latter have more than once returned along with the croupy inspiration, when his system has appeared surcharged with blood; and this was very likely to happen, from being too much indulged with food. Bleeding, purgatives, and blisters, with cold lotions to the head, were the means chiefly used for his relief. The spasms continued for several months, gradually losing their violence and frequency; and he is now five years old, and a fine healthy looking boy. He struggled through a smart attack of continued fever this last spring, which affected his head severely, but produced no return of his former symptoms.

I have also to add, that I lost, in April last, an infant, only three months old, in the same family, which was affected with croupy respiration, repeated convulsions, and every symptom of meningeal inflammation. This infant's alvine discharges had a very unhealthy appearance during its illness, and I have frequently had reason to suspect that such depraved secretions were continual as effects of such seizures. The eldest child, now ten years old, has experienced two attacks of epileptic convulsions within the last two years, and each time was cured chiefly by depletory measures. The parents of this family

have indeed been unfortunate with their children: but such afflicting results are not always met with, as I have experienced the pleasure of seeing recovery effected by the same means in more than half the cases that have come under my care.—*Med. and Phys. Jour.*

12. *Cases of Otitis, or Acute Inflammatory Ear-ache, successfully treated by Emetics; with Sketches of their remedial Effects in Chronic and Nervous Ear-ache, Erysipelas, Gout, and the Diseases of pregnant Females.* By JAMES KENNEDY, M.D., of Glasgow.—OTITIS may proceed from any of the causes by which the acute local inflammations are determined: the cases described in this article had their origin in the influences of cold air on the general system, and more especially on the seat of the disease: their treatment is original, at least the present writer is not aware of its having a place in medical history.

Sometime in the autumn of 1814, I had occasion to treat this affection in a robust ploughman, in a considerably aggravated form. It was of two days' standing, and its characteristic symptoms occupied the right ear, while the corresponding side of the head, face, and neck, was deeply implicated: at the same time it was intense, obstinate, and seemed to include something of an erysipelatous tendency. Cooling purgatives, blisters over the head and behind the ear, and free sanguineous depletion from the external jugular vein, were the chief remedies employed: their effects, however, were obscure and unsatisfactory; and the violence as well as extent of the diffuse inflammation which supervened on the puncture of the vessel, induced the resolution of abandoning for ever the practice of venesection in the neck, as a means subservient to the removal of this painful complaint.

During the next twelve months, several cases of the same kind were subjected to similar treatment, with exception of the requisite quantity of blood being abstracted from the arm. In all of them the patients' convalescence was slow; and in two, the disease assumed a chronic character: these last ended by the persons sustaining a considerable defect of hearing, which has never in any degree been repaired.

Meeting with an intense modification of the inflammatory ear-ache in 1816, I was led by a view of the predominating symptoms to deviate from the ordinary methods of cure in attempting its removal. The patient was a vigorous, florid young woman, and had been exposed to a current of cold air acting on the right side of her head and person, while recovering from a profuse perspiration. On the second day subsequently, her chief symptoms were quick pulses; hot, dry skin; hoarseness, and a cough, which aggravated the ear-ache; stiffness of the right cervical muscles; suffusion of the whole countenance; swollen eyelids; injection of the ophthalmic vessels; suspension of the nasal secretion; excruciating pain in the right ear, darting *generally* in radiating lines over the corresponding temple, and

*occasionally* taking the form of paroxysms which sent an intolerable stinging sensation into the internal tissues of the head; and, at the same time, she experienced great restlessness, insatiable thirst, and other febrile manifestations.

With the object of unloading the turgid vessels of the throat, the head, the eye, and other affected parts, and of determining simultaneously a change of action in the disordered vital organs, sanguineous depletion, to be followed by the exhibition of an emeticocathartic evacuant, was held to be the requisite indication in attempting to mitigate the patient's distress. Blood, accordingly, was detracted from the arm, to the extent of thirty-six ounces, when faintness supervened: this state was accompanied with nausea, retching, and a cold sweat bedewing the forehead; but its effects on the general system were imperfect and transitory. After the lapse of an hour, a powder containing half a drachm of ipecacuanha, one grain of the tartrate of antimony, and five grains of submuriate of quicksilver, was administered in the necessary proportion of treacle, and immediately followed by a free draught of tepid water. It soon commenced operating, but produced only four returns of vomiting, each of which was preceded by intense nausea, and occasioned an abundant flow of tears, and of the salivary secretion, with a discharge of much thin mucus from the nostrils. The ear-ache permanently disappeared during the efforts induced by the second return of vomiting; and, so soon as this had finally subsided, the woman was placed in bed, and forthwith sank into a state of profound repose, which was disturbed at the end of three hours by a copious alvine evacuation. Two more solicitations of the same nature occurred in the course of the evening, when a warm semicupium, with continuation of abstinence, promoted for the night a tranquil and refreshing sleep. Next morning, all the signs of topical and constitutional excitement had nearly ceased; and rest, low diet, with mild aperient medicine, brought the patient, in three days more, into her former health.

During the long period which has intervened since, twenty-five cases, in many respects alike, have been treated in exactly the same manner, and with the same results as that of which the history is detailed; and the legitimate induction from the evidence afforded by these results is, that a judicious combination of blood-letting, with emetics and laxative remedies, constitutes an efficacious and successful mode of subduing the inflammatory ear-ache, when it manifests the acute distinctions. In three of the subjects the emetic required to be repeated; but in all, one bleeding, varying from ten to forty-five ounces, according to the intensity of symptoms, and the constitutional peculiarities, was sufficient.

Simplicity of practice, however, being at all times desirable, the practicability of dispensing with venesection in this disease presented itself to my mind, and led to the measure of making

the treatment of its less urgent forms, by the use of emetic and cathartic applications alone, the subject of careful and reiterated experiment. Sixteen cases conducted on this plan, without a single failure, may therefore authorize my suggesting the propriety of prosecuting the inquiry, and of entertaining a conviction of the method being adapted to produce beneficial effects, under like circumstances, in the hands of other practitioners. In eleven instances, the emetic was twice, and in five, thrice exhibited; in every one of them the convalescence was rapid and perfect. One sketch may serve for illustration.

D. G., a lad of sixteen, of full habit and healthy, experienced a general chilliness, and other feelings of discomfort, in the evening after travelling in a stage coach, the windows of which were occasionally let down during the journey. At the same time the atmosphere was moist and cloudy, while a cold wind blew from the north-east, and his right side was, in consequence, exposed to its action. At night he bathed his feet in warm water, had a 'warm drink,' and went to bed, complaining very much of sharp wandering pains in the throat, neck, and right side of the face, with increasing difficulty of deglutition, and a stinging deep-seated pain in the ear. Next morning early, he was roused from an unrefreshing slumber, by a severe paroxysm of ear-ache, accompanied with aggravation of all the precursory symptoms. For that day and the following, he was subjected to the discipline of a domestic treatment, composed chiefly of saline aperients, in defective doses, frictions of the throat, with ammoniated liniment, and the insertion of laudanum on cotton into the affected ear. Such means, however, proving inefficient, the disease progressively advanced, and late in the third day came under my observation as a true otitis, distinguished by the certain signs, local and general, of inflammatory excitement.

On this occasion, slowness of the bowels, loaded tongue, heat and constriction of the skin, hoarseness, headache, with throbbing of the cephalic and cervical vessels, difficulty of swallowing, sense of cold all along the spine, excessive sensibility, and tumefaction of the right side of the face, eyelids, and neck, and an excruciating pain within the ear, which underwent intense exacerbations, with much disturbance of the respiratory and sanguiferous functions, afforded the grounds of a therapeutical indication.

Without loss of time, an active emetic, thirty grains of ipecacuanha, and three of the antimonial tartrate, was administered: its effects were powerful but not excessive; and the advantages derived from them were immediate and decisive. Before the last paroxysm of vomiting ceased, all the more urgent symptoms had nearly subsided; and the patient, on reclining himself to rest, soon fell into a tranquil sleep, during which a general and profuse perspiration supervened. Before midnight three

copious alvine dejections were obtained; and he passed the morning in a state of uninterrupted repose. Throughout the whole of this day a genial moisture universally bedewed his cutaneous surface: he remained closely in bed; and, without other food or medicine, took twice some beef-tea, with a small piece of bread. At bed-time, an opening medicine—a scruple of rhubarb, with one grain of ipecacuanha—was exhibited; and, in half the proportion, repeated next morning. By noon, this produced a large fœtid dejection, after which the young man felt so free of uneasiness of every kind as to become importunate in his desires of leaving the bed. This design, being at last accomplished in the evening, led to a renewed attack of the disease, occasioned by his momentary exposure to a stream of cold air: his rest in consequence was disturbed; and early in the subsequent morning, many of his inflammatory symptoms had reappeared, and the ear-ache grown quite agonizing. For these, he took the emetic and purgatives, as before; and the same results ensued. In the end, confinement to bed, abstemious regimen, warm foot-baths, with mild diaphoretics and aperients, enabled him, in four days longer, to resume his ordinary occupations.

By the pathological histories which this detail exemplifies, we should be guided to the conclusion, that acute, even very acute and complicated otitis, may be subdued by the united influences of emetics and alvine evacuants, independently of blistering or venesection. In its milder, though still acute form, the disease will frequently yield to the unassisted powers of an emetic of ipecacuanha with antimony; which, besides inverting the stomach's natural action, communicates excitement to the skin, and the system of organs on which the varied pressures of alimentation depend. Observation of this practice, in fifty-three instances, has furnished me with inducements to regard it, notwithstanding its extreme simplicity, as convenient and generally successful; and, under this impression, to submit its merits to more extended and diversified trial. The notes of three cases, taken indiscriminately from the list, may represent the principles on which this statement is founded.

R. G. M., a fine lively boy, aged eleven years, had complained for a few days of a common cold, attended with stiffness of the neck and considerable enlargement of the submaxillary glands. Domestic remedies, however, had in a great measure removed his principal symptoms, when he employed his first escape from confinement in hastening to join his companions at a pool, on which the ice was softening, by the effects of an incipient thaw. At this place he spent upwards of two hours, in a variety of juvenile amusements, and returned to the family with his feet soaked in melted snow, and his whole person moistened with perspiration. He was instantly undressed, and sent fasting to bed, where he passed the evening without other

inconvenience than what arose from an increasing desire of food. Under these circumstances, he had an early but light supper, and went to sleep in the best spirits. Nevertheless, ere noon of the next day, he began to droop; and by evening had symptomatic fever, difficulty of swallowing, and pain over all the left side of the head, with frequent and violent fits of ear-ache. The usual popular antidotes were opposed to this state, but without advantage; and, late at night, his treatment was consigned to my direction. On being questioned, he confessed that he had been forcibly struck with a snow-ball on the affected side of the face, and that some time elapsed before the snowy particles were picked out of the ear, on account of their coldness. Altogether, an acute otitis seemed evidently to be making rapid progress. Immediately, therefore, an emetic, containing fifteen grains of ipecacuanha and one of the tartrate of antimony, was administered, and in due time determined the best results, by abolishing entirely the ear-ache and its concomitant febrile movements. On the disturbance thus induced subsiding, the patient was immersed in a warm bath, where he underwent friction of the spine, abdomen, chest, and neck: this was followed by a profound sleep and gentle perspiration. Early on the ensuing day, his bowels became active, the cutaneous functions free, the circulation equable, and his exemption from pain complete. The establishment of his convalescence was now decided: light cooling nourishment, exercise in his room, and a gradual exposure to the genial atmosphere, without medicine of any kind, restored him in a few days to the enjoyment of vigorous health.

Equally beneficial were the results of this treatment in the following instance:—A. D., a maid-servant, twenty-four years of age, and endowed with a sanguine temperament, had sustained the effects of cold and wet, after being heated at work, on the first day of her catamenial period. The progress of this, in consequence, was suspended, and the circumstance concealed from her mistress, who, notwithstanding, directed her to have a warm bath, aperient medicine, and a draught for inducing perspiration, as the means of removing a catarrh, complicated with an excruciating ear-ache. By these remedies the general symptoms were partially mitigated; but the local affection continued to augment till its intensity had occasioned a train of alarming hysterical agitations. On the third day from her seizure, this person came under my care, in a state distinguished by the usual manifestations; the nervous disturbance particularly was severe, and had much in it of a true convulsive nature. Without delay, she took an emetic (*R. pulv. ceph. ipec. ℥ss. tart. antim. gr. iij.; M. rité, ut fiat pulvis more solito sumendus;*) and in due time a warm semi cupium, which was succeeded by free alvine evacuation, a general diaphoresis, and a long sleep. While rejecting a large quantity of bilious matter in the second

fit of vomiting, she perceived the ear-ache yield, and it ceased entirely before the drug's specific influences were exhausted. In this interval, the uterine emanation re-appeared, and uninterruptedly perfected its ordinary course; she had no return of her nervous disturbance; and, with the necessary precautions against cold, was freed in a few days from every trace of her complaints.

More than one practical hint may be deduced from the next history. Mrs. S., having a lymphatic constitution, the mother of three children, and on this occasion in the fifth month of pregnancy, had inadvertently placed herself in the range of a moist autumnal air, blowing through an imperfectly closed window. In the evening, she experienced a general chilliness, with returns of shivering, constriction of the skin, soreness of the parietal bones, and a distressing sensation in the teeth of her upper jaw on making a respiration. After bathing her feet in warm water, filling both ears with cotton, impregnated with a pungent oil, and covering the throat with flannel, she went early to bed, but soon became hot and restless; and towards midnight had an accession of acute lancinating ear-ache. This returned in frequent aggravated paroxysms, darting to the innermost structures of the head, and, in the end, induced nausea, with very fatiguing attacks of retching.

Finding, in the morning, her vital functions in a state of great disturbance, and observing the indication pointed out by nature, which I had adopted on other occasions; and even in this person's peculiar circumstances, I hesitated not to advise the immediate exhibition of an emetic,—thirty grains of ipecacuanha, and two of tartrate of antimony, with large dilutions of tepid water. It operated copiously, but without severity, excited the bowels and cutaneous vessels, rebalanced the circulation, and was in all respects salutary. A warm bath, abstinence for that day, a refreshing sleep, and moderate exercise in her room, in due time rendered her convalescence complete.

Otitis, even in the simplest state, is not unfrequently the cause of very acute distress to the sufferer; but on such occasions, like tooth-ache, it seldom excites any great degree of sympathy. For this reason, and from other sources of neglect, the disease is sometimes permitted, by want of suitable interference, to establish an ascendency in the system, to which the best means of cure may be vainly opposed. On this account, therefore, there is a manifest propriety in subjecting it to treatment during its earliest and uncomplicated stage: and, from the evidence of these cases, the extensive and diversified influences of vomiting seem to be well calculated to determine the indicated results. These instances, it is true, afford exemplifications of ear-ache merely in its acute inflammatory form; but, in conjunction with other appropriate remedies,—venesection, contra-stimulants, epispastics, and alvine evacuation,—it furnishes a powerful resource for subduing the affection in its more aggravated

as well as protracted modifications. Such, indeed, are of less frequent occurrence, especially unaccompanied with lesion of the implicated organ; nevertheless, where the morbid action is still *nearly* simple, though chronic and inflammatory, the exhibition of emetics alone will often suspend its progress, frequently change its character, and sometimes restore all the disbalanced functions to their natural tenour. In my experience, the observation of thirteen cases, which it would extend the present article unduly to detail, goes to elucidate and confirm this doctrine; and a still greater number, having complications, authorizes my stating, that this means shall contribute, decidedly, towards augmenting the efficacy of a systematic treatment for mitigating, or entirely removing the disease.

Nervous ear-ache, as it has been denominated, has its character, when idiopathic, exceedingly aggravated by derangement of digestion; and, when symptomatic, as it more generally is, it derives its origin and intensity from the operation of substances, offending or disordering the alimentary system. It may be recognised by the usual signs of 'nervous irritation,' in connexion with that peculiarity which distinguishes the local pain. For this affection, therefore, which when protracted may attain a very injurious, as well as obstinate, ascendency over the constitution, an emetic, assisted by the common topical applications, and repeated, according to circumstances, to the third or fourth time, almost universally has favourable results. When yawning, and squeamishness, and gastric flatulency, are superadded to the other symptoms, this remedy is certain.

Erysipelatous inflammation, as well as the true erysipelas itself, under both its local and erratic modifications, proceeds for the most part from the disorders of vital action, which have their origin in an imperfect or unnatural discharge, sometimes simple, sometimes complicated, of the digestive or cutaneous functions. In its first stages, the former is always accompanied, in a greater or less degree, with the febrile manifestations; and these, in being modified by the disease's peculiar nature, have a direct tendency to create inappetency, debility, and mental depression. Under such circumstances, the administration of ipecacuanha, with rhubarb and capsicum, in frequent and regulated doses, exerts a very beneficial impression on the skin and assimilative organs. When this salutary change has evidently been effected, a light, exhilarating, nutritive course, aided, when necessary, by suitable topical remedies, shall in general be found sufficient for the restoration of health. In many instances, however, a gentle emetic intercepts the malady: and, by consequence, should be held as the best means of accomplishing the preliminary objects of practice.

Gout has a constitutional source, associated with a tendency to assume a local determination. In its early attacks, and especially when the manifest symptoms are those of excitement, the paroxysm shall in many instances be intercepted by the

actions of an emetic, assisted by soothing the affected part with cold or with warm applications, and a determinate course of aperients, temperance, and rest. In almost all its forms, indeed, except under circumstances where the exhibition of such a remedy would necessarily be contra-indicated, the gouty accession will yield sooner to the appropriate treatment, if this has been preceded, or is succeeded, by the diffusive influences an emetic is capable of communicating to all the systems of the animal economy. At present, however, it is not proposed to investigate this question in detail.

Every attentive observer may be taught by his own experience to conclude, that justly qualified emetics possess a tendency to invigorate the assimilative organs. The confirmation of this maxim is drawn from the growing desire of food, the disposition to sleep, and the genial perspiration, which are often consecutive to their salutary operations. It is only when abused by ill-timed exhibition, excess of strength, improper ingredients, or a too free repetition, that they impair the excitability of the brain, the stomach, and the system. In some cases, as a preparatory measure, it may be necessary to unload, by sanguineous depletion, the overcharged vessels of the brain; in others, to moderate when exalted, by the same means, the tone of the nervous energy which is supplied by secretion from the blood; and in some, where the nervous activity is defective or oppressed, an acid draught, or affusion* of cold water on the head and person, shall render the system more susceptible of the influences which an emetic naturally produces.

By observation of their effects in numerous and greatly diversified instances, my own mind has, long since, been persuaded of the advantage of exhibiting such remedies in *full*, preferably to *inferior* doses; and, in my hands, a combination of antimony with ipecacuanha improves the peculiar efficacy of both medicines. A difference of opinion may be entertained, and indeed is usually retailed in dispensatories and pharmacological books, with regard to the propriety, or even the safety, of administering emetics to pregnant females. Of their safety, however, in ordinary circumstances, I entertain no doubt; and it is exemplified in one of the preceding sketches, taken from several others of the same kind. Reflections on the violent agitations which females occasionally undergo, without bad effects, even in advanced pregnancy, first of all induced me to investigate the principles on which the practice of treating them with emetics, as a remedy for disease, has been interdicted; and, by leading to a conviction of this proscription being founded on theoretical preconception, seemed to authorize a cautious trial, under urgent indications, of their powers. This proved most beneficial; and, on many subsequent occasions, the right admin-

* The reader will find this practice successfully adopted, by recurring to the Repository, Vol. XVIII. pp. 26.—29.

istration of an emetic* to a pregnant woman has secured the happiest results. Whoever, in fine, shall reflect philosophically on the acts of violent exertion, on the effects of irregularity, accidents, diseases, and their treatment, and on the means employed by execrable knaves for the sake of procuring abortion, which many females sustain without injury, must be led to the conclusion, that nature is too wise, and has been too provident of the well-being of her noblest offspring, to leave the important processes of utero-gestation susceptible of derangement or destruction by the effects which well-regulated emetics naturally determine.

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## SURGERY.

13. *Re-union of a Nose, which had been completely separated.*—The following abstract of an instance in point we take from one of the best German Journals of the day:—

An unfortunate tailor, by the name of Gruzlewski, seated himself in a window, one wing of which he had opened. A sudden and violent gust of wind shut it with considerable force, and a part of the glass which was broken carried off a great portion of the man's nose. The separated piece was about the length of a finger, and the whole breadth of the nose. It fell from the second story of the house into the street. The circumstance occurred about seven o'clock in the evening. A surgeon was immediately sent for, and he was satisfied with merely applying a plaster. Another surgeon, however, was consulted two hours after the accident. He sought for the nose with the candle in the street, and placed it in its natural situation. In a few days it had united, and regained its warmth and sensibility. The only mark of the accident which remains perceptible is a small, narrow, red scar.

It is observed, that the magistrates would testify the truth of this relation, if it were considered necessary.

A similar case is also recorded in the same Journal, in which complete union took place, where the nose had been entirely

* With reference to this statement it may be added, that pregnant women often sustain great evacuations, both by the lancet and purgative medicines, intense excitement from blistering, and other remedies employed for the treatment of febrile and inflammatory seizures, without incurring a tendency to abortion. I have, moreover, conducted the cure of females in this state, with fractures of the upper and lower extremities, and in one instance with fracture of the right thigh-bone, and at the same time of both bones in the left leg; in another case, a violent contusion on the lumbar spine was followed by a sphacelating ulcer, which yielded to the usual remedies; and, in both, the course of pregnancy had a favourable issue. By one of my friends in this city, also, a malignant tumour was removed by amputation from the right breast of a woman, in her fifth month; and, while her particular condition passed on undisturbed, the operation was in all respects fortunate.

separated.—*Journal der Chirurgie und Augen-Heilkunde*, von GRAFE und WALTHER; band 7, heft 4.

For much interesting information upon the subject of the reunion of divided parts, we refer our readers to a publication of WIESMANN, "De Coalitu partium a reliquo Corpore prorsus disjunctarum."

14. *Necrosis.*—Dr. RICHTER, of Berlin, has lately published some long and interesting papers upon the subject of the various kinds of Necrosis. We abstract the following observations, which may not be uninteresting to our readers.

*Necrosis syphilitica.*—This species begins mostly in the substance of the bones, and extends lengthways. The pain (which may last for a considerable time) is of a boring, gnawing kind, and increases when the patient is warm in bed. At this time, indeed, it frequently is so severe, that he is obliged to rise. The swelling gradually increases, but does not acquire the size which is witnessed when the disease arises from other causes. The inflammatory process is slowly developed, never very acute, and does not extend beyond the part of the limb which has been previously swoln. The redness is of a pale rose-colour, very limited, well defined, and not gradually lost in the surrounding parts. The temperature of the part is not high. The pain arising from inflammation of the soft part is more superficial and lancinating, and may be distinguished, by intelligent patients, from the boring, gradual, and deeper-seated pain, which is characteristic of this form of necrosis. The swelling of the limb is but little increased when inflammation of the skin supervenes, and every symptom is increased when the patient is warm in bed. Some time elapses before an opening takes place in the skin; and, before the small portion of skin is absorbed, it assumes a limited dark appearance. Subsequently, the skin in the neighbourhood of this opening is more destroyed than the cellular membrane beneath. When necrosis arises from other causes, the latter structure is most affected. Around the opening small superficial ulcerations form, which take on all the characters of chancres. The matter, which is from the commencement discharged from these openings in the skin, differs much from the qualities of healthy pus, particularly if the patient has been long affected with syphilis, and is of a cachectic habit of body.

*Necrosis arthritica* occurs only in advanced age. It arises either suddenly or gradually, and may show itself, at first, either upon the surface, or the periosteum, or the joints, of the bones themselves. Its course is rapid, if the subject is of a full plethoric habit of body. The paroxysm of gout is, probably, suddenly suppressed. In patients of a different constitution, it proceeds more slowly. The pain is acute, and seldom felt in the middle of the bones, but more superficially upon the periosteum, and affects the whole circumference of the limb equal-

ly In this species, warmth is borne without any aggravation of the symptoms; but, towards midnight, there is generally an exacerbation, the severity of which passes off in the morning. Upon any approaching change of weather, the pain is much increased. The swelling quickly follows the pain, and soon becomes considerable, as the inflammation begins mostly in the soft parts, and subsequently extends to the bones. The inflammation sometimes takes place at the same time with the swelling, and extends to the same distance. The redness is darker than that observed in the preceding species, and less diffused; but still gradually vanishes towards the edges. The sensibility of the inflamed part is often so considerable, that the slightest covering cannot be borne. The fistulous openings are small, and the edges easily become callous. The fluid at first discharged is thin and watery, and excoriates the adjacent parts: it sometimes, under circumstances of a favourable nature, becomes of a better quality.

*Necrosis scrofulosa* takes place, in most cases, during the period of growth, in those subjects who are of a generally scrofulous habit. It arises and proceeds very gradually, and may last for years, affecting at the same time several bones. The pains, at the commencement, are moderate, and observe no regular course: they are not increased when the patient is warm in bed, nor by vicissitudes of weather. The swelling also takes place very slowly, but extends over the whole of the affected parts; perhaps occupies all the limb, the under part being œdematous. It becomes gradually larger, and is not tense and hard, but remains of a doughy feel. In this state it may remain, the pain continuing some time before inflammation supervenes. At last inflammation does take place, but does not rise to a high degree; the part appearing of a pale rose-colour, as in the syphilitic species: it is more diffused, however. When the disease is of long duration, and a great part of the bone is destroyed, the colour of the inflamed part becomes of a bluish cast, and darker. It is still distinguished by its asthenic character, by the swelling of the part, which remains doughy, and retains the impression of a finger. The fistulous openings possess the peculiarity of easily healing, and again breaking out; or the passage to the destroyed portion of bone is closed up by fungous growths, which shoot from the openings. The matter at first discharged has the colour and consistence of good pus, but is often mixt with shreds resembling the coagulated white of an egg. The pains frequently abate entirely after the swelling has broken.

*Necrosis scorbutica.*—Besides the general symptoms of weakness and broken health, those which refer to the state of the bone are marked by the following peculiarities:—This species frequently supervenes upon other diseases of the bones; and, long before any destruction of the bone occurs, pain and other symptoms take place. The swelling is violent, and becomes

œdematous, and is not for some time accompanied by inflammation; which at last, however, occurs very rapidly. The blush of colour is dark, bluish, and gradually lost in the surrounding parts. The sensibility of the parts, and the temperature, are not so highly increased as in the nervous inflammation. The fistulous openings form rapidly, become large, and approach each other. The sinuses are thin and flaccid, and are disposed to mortify. The matter poured out when the swelling bursts is thin, watery, brown in colour, and mingled with blood: it at last, perhaps, assumes a more favourable appearance. At the edges of the openings, light bleeding fungi form, which increase in size, and obstruct the exit of the contained matter. The contiguous veins are much increased in size.

*Necrosis mercurialis* resembles very nearly the scorbutic species. It runs a tedious and unfavourable course. The general symptoms of the mercurial poison give the clearest indication of the nature of the malady.

*Necrosis metastatica.*—The soft parts surrounding the bones are usually first attacked in this species. The affection of the bones is secondary and sympathetic. The symptoms resulting from a metastatic affection, whether the hard or soft parts are affected, are sudden in occurrence, and rapid in their progress. Pain precedes the other symptoms but a short time: almost along with it arise swelling, inflammation, and abscesses; so that in a few days, or perhaps in a few hours, a portion of destroyed bone may be detected with a probe. The pain occurs suddenly, is very violent, darting, and constant. The swelling is considerable; increases rapidly when the soft parts are primarily affected, and more slowly when the substance of the bones is the seat of the evil. The metastatic inflammation is always limited, violent, and very painful. The redness of a deep tint; the temperature high. The abscess forms, and ruptures speedily. When the muscles and cellular membrane are at first attacked, one opening only is usually formed, and not several at distant points; which occurs more frequently during the development of the disease in the bony structure. The pus discharged is of a bad quality, brown, bloody, of a blackish colour, and thin.

*Necrosis a causa mechanica.*—The cause of this species depends upon the degree of violence inflicted. The progress is generally rapid. The symptoms are violent; and therefore correspond, to a certain degree, with those above described. The nature of the inflammation, and the result of the case, depend almost entirely upon the constitution of the patient.—*Journal fur Chirurgie, &c.* von Graffe and Walther.

We may, in a subsequent number, abstract a few more observations from the excellent papers of Richter, upon the subject of necrosis. A continuation of them is promised; and we shall, of course, submit to our readers the treatment proposed by this eminent surgeon in this formidable disease.

15. M. Janson's *Case of removing a large portion of the Scapula.**—A female, employed in the manufactory of silk, aged 43, began in 1819 to perceive a tumour in the posterior and middle portion of her shoulder-blade: it was immoveable, painful to the touch, and appeared fixed to the bone. In 1824, this tumour had acquired the size of a child's head, was hard, wrinkled, and had occupied all the bone, excepting its inferior border and the supra spinal fossa, and had extended itself to the highest part of the axilla, with an elongated and voluminous pedicle. It was moveable in all directions, and carried the arm with it in all the motions given to it. The portion of this swelling which was situated in the axilla, obliged the patient constantly to keep his arm elevated, and at a right angle with the trunk of the body. Violent pains, darting from the shoulder along the arm, were felt in the breast. At length, from want of sleep and indigestion, the patient had become emaciated, and was evidently sinking.

On the 4th of October, M. Janson attempted the removal of the tumour. He included it within two semi-elliptical incisions: dissected the edges of the wound, so as to preserve as much skin as possible, and detached the tumour in every direction; then raising it, and the tumour breaking in the centre throughout its whole thickness, he removed the greatest part; cutting the attachment of the trapezius, of the supra and infra spinatus muscles, he discovered that all that portion of the scapula situated above its spine was in a healthy condition; and separating by the saw the diseased part of the bone, he thus preserved the articulation of the arm. Finally, laying bare that portion of the tumour situated in the axilla, by an oblique incision from below upwards, he dissected it, and drew it upwards carefully; the cellular tissue which fixed it to the arm gave way, and he succeeded in removing it entirely. All the vessels were then tied: the axilla properly supported by a plug; and the edges of the wound, which was six inches across and nine in length, were brought together with sticking-plaster.

For a few days the success of the operation was doubtful, from causes affecting the general health; but these were calmed, and the patient quitted the hospital at the end of two months, nearly cured.—On the 15th of March it was entirely healed, and the motions of the limb were becoming daily more free.

## MATERIA MEDICA.

16. *On a new Preparation of Croton Tiglium.* By John Pope, Esq.—Mr. Pope supposes that the nausea and griping so often attendant on the use of this article, depends upon the oil being

* Archives Generales.

expressed from the medulla of the seed, without previously stripping off its epidermis and husk. He recommends the use of the alcoholic tincture, which is made by digesting two ounces of the pure medulla of the croton tiglium in twelve ounces of alcohol (sp. grav. 836°) for six days. The dose of the filtered tincture for an adult is about twenty minims. No experiments have as yet satisfactorily proved the effects of the husk and epidermis used by themselves. Mr. Pope has known the croton tiglium evacuate the bowels after every other medicine had failed; a fact which, from our own experience, we can corroborate.

17. *Cupping Glasses to Poisoned Wounds.*—Dr. Barry, an English physician, read a paper to the Royal Academy of Medicine, relative to some experiments made by him, tending to prove that cupping glasses applied to a poisoned wound prevents the absorption of the venomous matter. The experiments were as follow:—Wounds were made upon the back and thighs of full-grown rabbits, and, when the blood had ceased to flow, two or three grains of strychnia in powder, or two or three drops of hydrocyanic acid, were introduced into the wounds; then, after intervals of three, five, and ten minutes, a cupping glass was applied to the wound, which was renewed as often as it fell off; no symptoms of poisoning occurred in these animals: but if, on the contrary, this precaution was not taken, they all died. On one occasion, Dr. Barry waited until the animal became affected with convulsions, nevertheless, he succeeded in saving it by these experiments. Dr. Barry, who believes that the circulation of blood in the veins takes place in consequence of an action exercised upon that fluid by the thorax during inspiration, concludes that any circumstance capable of changing the force of this action from the circumference to the centre in an inverse ratio,—that is, from the centre to the circumference, as is done by the cupping glass, will not only prevent absorption, but will also bring back to the surface the matter already absorbed,—as long, at least, as it remains within the influence of this action. (*Archives Generales*, Sept.)

At a subsequent meeting, M. Adelon read a report of M. Laennec upon the experiments of Dr. Barry, the results of which have been verified:—a cupping glass having been applied upon a wound into which some stychnia in powder had been placed, prevented the effects of this substance from manifesting themselves, and also suspended them when beginning to be apparent, and consequently appear to have prevented the absorption of the poison. The experiments of Dr. Barry have not only been confirmed by repetition, but others have been performed with the white oxyde of arsenic, hydrocyanic acid, and the upas tieuté.

1. Eight grains of white arsenic were introduced into a wound made in the thigh of a dog, three quarters of an hour after a cupping glass was applied to the wound, and kept on for four hours,

and the animal suffered no inconvenience. Another dog under the same circumstances, where the cupping glass was not applied, died at the end of fifteen hours.

2. Six drops of hydrocyanic acid were poured into a little wound made in the thigh of a rabbit, the cupping glass was applied for twelve minutes, and the animal showed no signs of having been poisoned; but when it was taken away convulsions came on so suddenly that it was thought to be dead, but a fresh application of the cupping glass restored it to its former state of tranquillity; the same effects ensued upon removing it again, and it was only after half an hour after the introduction of the poison that it could be removed with impunity. Another rabbit, treated with the same quantity of acid, where no cupping glass was used, died in two minutes. The results of trials made with a grain of the Upas Tieuté were in all respects similar. Dr. Barry concludes that the cessation of the symptoms of poisoning from the application of the cupping glasses, arising in consequence of that portion of the poison which has been absorbed being recalled to the wound and taken out of the circulation,—a position which is combated by M. Segalas, who believes that the cupping glass only acts by preventing the absorption of any new quantity of the poison, and that the portion which has penetrated ceases to act because it is rejected by the different excretions. (*Archives Generales*, Octobre.)

18. *Effects of Iodine.*—M. Locher-Balber has published several cases, in which the good effects of the above medicine were demonstrated. The first case is that of a woman, twenty-five years of age, who, otherwise of a good constitution, was subject at each period of menstruation to violent headachs, so as to be obliged to keep her bed; sometimes violent pains in the teeth, or bowels, occurred instead of headach. After taking half an ounce of the tincture of iodine, (the dose is not mentioned,) she was freed of all her ailments, and the menses have subsequently been quite regular, and not preceded by any painful affection. The second and third cases are so far similar, inasmuch as they relate to symptoms dependent upon menstruation, and they equally yielded to the tincture of iodine. Three other cases are recorded of enlarged lymphatic glands, in one the external and internal use of iodine produced no effect on the disease, in the other two cases a cure was effected. M. Locher-Balber finally relates the following case:—A child, six years of age, affected with tinea for a long time, had enlarged glands of the neck, the least of which were as large as a nut. Five drops of tincture of iodine were given three times a-day, the swelling of the glands diminished considerably, and the tinea was radically cured. The medicine was obliged to be withheld sometimes, because it occasioned, after a certain period, a feeling of great heat in the stomach: the patient was removed from the author's

care, and therefore he does not know the termination of the case. Other cases relate to the ill effects of the tincture of iodine; and in one instance a general emaciation ensued, and the remedy was abandoned.

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At the first public Commencement of the JEFFERSON MEDICAL COLLEGE, held in the Masonic Hall, Philadelphia, on the 14th of April, 1826, the degree of Doctor of Medicine was conferred on the following gentlemen, to whose names are attached the subjects of their Theses and the places of their residence.

| | | |
|---|---|---|
| George Baldwin, | *Cholera Infantum*, | Pennsylvania. |
| Peter Q. Beekman, | *Syphilis*, | New Jersey. |
| John Bowen Brinton, | *Cholera*, | Pennsylvania. |
| George Carll, | *Anthrax*, | do. |
| Benjamin B. Coit, | *Tetanus*, | Connecticut. |
| Thomas M. Dick, | *Epidemics*, | S. Carolina. |
| Joel Foster, | *Neuroses*, | Vermont. |
| Charles Graeff, | *Rheumatism*, | Pennsylvania. |
| John Graham, | *Epilepsy*, | Ireland. |
| Charles M. Griffiths, | *Cholera Infantum*, | Pennsylvania. |
| Jesse W. Griffiths, | *Intermittent Fever*, | do. |
| Ralph Glover, | *Hernia*, | New Jersey. |
| Nathan L. Hatfield, | *Dysentery*, | Pennsylvania. |
| William Johnson, | *Extra Uterine Pregnancy*, | do. |
| M. L. Knapp, | *Apocynum Cannabinum*, | New York. |
| Thomas B. Maxwell, | *Lobelia Inflata*, | Pennsylvania. |
| Atkinson Pelham, | *Mania a Potu*, | Kentucky. |
| Benjamin Shaw, | *Medical Practice*, | Pennsylvania. |
| J. Frederick Stadiger, | *Epilepsy*, | do. |
| James Swan, | *Scrofula*, | Massachusetts. |

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